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River Crossings

Volume 5

January/February 1996

Number 1

A New Year - A New Look

Starting with this issue, *River Crossings* has a "new look". We hope the new format will make it more "reader friendly".

Sixth Annual MICRA Meeting

Chairman Mike Conlin, Illinois Department of Natural Resources, has announced the scheduling of the 6th Annual MICRA meeting. As in past years it will be held in conjunction with the Spring meeting of the American Fisheries Society, Fisheries Administrators' Section.

The meeting will be held at Spirit Lake, Iowa on Sunday, Monday, and Tuesday April 21, 22 and 23. Meeting times are as follows:

- AFS Fish Administrators meeting will begin on Saturday evening (April 20) and end at noon on April 22.

- MICRA's Paddlefish/Sturgeon SubCommittee meeting will be held concurrently with the AFS Fish Administrator's, beginning at 1:00 P.M. on April 21 and ending at noon on April 22.

- MICRA's 6th Annual meeting will begin at 1:00 P.M. on April 22 and end at noon on April 23.

Meeting place will be the Village East Resort, P.O. Box 499, Okoboji, IA 51355, 1-800-727-4561.

MICRA Bill Introduced

Congressman Steve Gunderson (R/WI) introduced the "Mississippi Interstate Cooperative Resource Agreement Act of 1996" (H.R. 2939) on February 5th. Douglas Bereuter (R/NE) and James Leach

(R/IA) have both signed on as co-sponsors. Gunderson is currently seeking additional co-sponsors, as well as someone to introduce a companion bill in the Senate.

No funding is provided with the bill. Instead the Secretary of the Interior is authorized to use available funds to assist MICRA in carrying out a three year pilot test of its program in order to evaluate MICRA as a "model for the development of long-range strategic plans for the management of interjurisdictional river fishery resources".

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Persons interested in additional information about the bill should contact the MICRA office or Ms. Dana Wolfe, Representative Gunderson's Legislative Director at (202) 225-5506 in Washington, D.C.

The Endangered Species Act and Religious Philosophy

"A wolf's green eyes, a sacred blue mountain, the words from Genesis, and the answers of children all reveal the religious values manifest in the 1973 Endangered Species Act". These words are taken from a recent speech by Interior Secretary Bruce Babbitt entitled, "*Between the flood and the rainbow*"—OUR COVENANT: TO PROTECT THE WHOLE OF CREATION. What follows are additional excerpts from Secretary Babbitt's speech.

"I began 1995 with one of the more memorable events of my lifetime. It took place in the heart of Yellowstone National Park...I had been given the honor of carrying the first wolves back into that landscape. Through the work of conservation laws, I was there to restore the natural cycle, to make Yellowstone complete."

"I then returned to Washington, where a new Congress was being sworn into office, and witnessed power of a different kind...Attack on water, land, creatures...the Act they have most aggressively singled out for elimination—one that made Yellowstone complete—is the 1973 Endangered Species Act...Never mind that this Act is working, having saved 99 percent of all listed species; never mind that it effectively protects hundreds of plants and animals...never mind that it is doing so while costing each American 16 cents per year."

"For the new Congress...while allowing for...charismatic species...can find absolutely no reason to protect all species in general...Who cares, they ask, if

the spotted owl goes extinct? We won't miss it...Over the past year that is, I think, a fairly accurate summary of how the new majority in Congress has expressed its opinion of the Endangered Species Act."

"They are not, however, the only Americans who have expressed an opinion on this issue...Recently I read an account of a Los Angeles "Eco-Expo"...where children were invited to write down their answers to the basic question: 'Why save endangered species?'... One child, Gabriel, answered, 'Because God gave us the animals.' Travis and Gina wrote, 'Because we love them.' A third answered, 'Because we'll be lonely without them.' Still another wrote, 'Because they're a part of our life. If we didn't have them, it would not be a complete world. The Lord put them on earth

to be enjoyed, not destroyed."

"Now, in my lifetime I have heard many, many political, agricultural, scientific, medical and ecological reasons for saving endangered species...But none of their reasons moved me like the children's. For these children are speaking and writing in plain words a complex notion that has either been lost, or forgotten, or never learned by some members of Congress, and indeed by many of us. The children are expressing the moral and spiritual imperative that there may be a higher purpose inherent in creation, demanding our respect and our stewardship quite apart from whether a particular species is or ever will be of material use to mankind. They see in creation what our adult political leaders refuse to acknowledge. They express an answer that can be

River Crossings

Published by

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication"; and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

reduced to one word: values."

"...when I was...growing up in a small town in Northern Arizona. I learned my religious values through the Catholic Church, which, in that era, in that Judeo-Christian tradition, kept silent on our moral obligation to nature. By its silence the church implicitly sanctioned the prevailing view of the earth as something to be used and disposed however we saw fit, without any higher obligation...there was never any reference, any link, to our natural heritage or to the spiritual meaning of the land surrounding us."

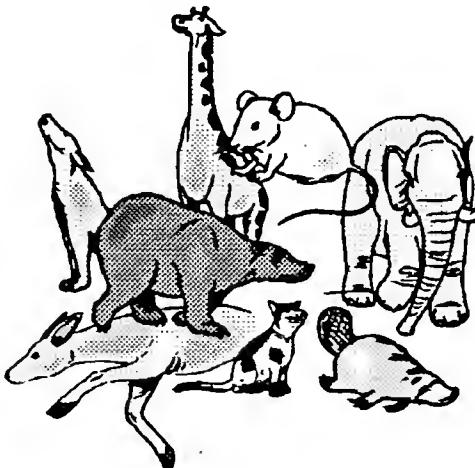
"Yet, outside that church I always had a nagging instinct that the vast landscape was somehow sacred, and holy, and connected to me in a sense that my catechism ignored."

"At the edge of my home town (was) a great blue mountain called the San Francisco Peaks...That I was not alone in this view was something I had to discover through a very different religion ...the Hopi Indians. And it was a young Hopi friend who taught me that the blue mountain was, truly, a sacred place...that the land, and that blue mountain, and all the plants and animals in the natural world are together a direct reflection of divinity, that creation is a plan of God, and I saw, in the words of Emerson, 'the visible as proceeding from the invisible.'

"That awakening made me acutely aware of a vacancy, a poverty amidst my own rich religious tradition. I felt I had to either embrace a borrowed culture, or turn back and have a second look at my own...Is there nothing in our Western, Judeo-Christian tradition that speaks to our natural heritage and the sacredness of that blue mountain? Is there nothing that can connect me to the surrounding Creation? There are those who argue that there isn't. There are those industrial apologists who, when asked about Judeo-Christian

values relating to the environment, reply that the material world, including the environment, is just an incidental fact, of no significance in the relation between us and our Creator. They cite the first verses of Genesis, concluding that God gave Adam and his descendants the absolute, unqualified right to 'subdue' the earth and gave man 'dominion over the fish of the sea, and over every living thing that moveth upon the earth.' God, they assert, put the earth here for the disposal of man in whatever manner he sees fit. Period."

"They should read a few verses further. For there, in the account



of the Deluge, the Bible conveys a far different message about our relation to God and to the earth. In Genesis, Noah was commanded to take into the ark two by two and seven by seven every living thing in creation, the clean and the unclean. He did not specify that Noah should limit the ark to two charismatic species, two good for hunting, two species that might provide some cure down the road, and, say, two that draw crowds to the city zoo. No, He specified the whole of creation. And when the waters receded, and the dove flew off to dry land, God set all the creatures free, commanding them to multiply upon the earth. Then, in the words of the covenant with

Noah, 'when the rainbow appears in the clouds, I will see it and remember the everlasting covenant between me and all living things on earth.'

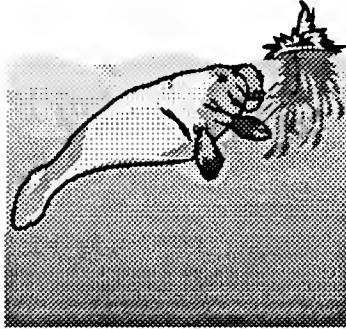
"Thus we are instructed that this everlasting covenant was made to protect the whole of creation, not for the exclusive use and disposition of mankind, but for the purposes of the Creator."

"Now, we all know that the commandment to protect creation in all its diversity does not come to us with detailed operating instructions. It is left to us to translate a moral imperative into a way of life and into public policy. Which we did. Compelled by this ancient command, modern America turned to the national legislature which forged our collective moral imperative into one landmark law: the 1973 Endangered Species Act."

"The trouble is that during the first twenty years of the Endangered Species Act, scientists and administrators and other well-intentioned people somehow lost sight of that value – to protect the whole of creation – and instead took a fragmented, mechanistic approach to preserve individual species. Isolated specialists working in secluded regions waited until the eleventh hour to act, then heroically rescued species – one at a time. Sometimes the result was dramatic recovery, but often the result was chaos, conflict, and continuing long term decline. In the Pacific Northwest, for example, the spotted owl was listed even as federal agencies went forward with clear cutting. Efforts to save the alligator proceeded even as the Everglades shrivelled from diverted waters. They listed California salmon runs even as water users continued to deplete the spawning streams."

"It is only in the last few years that we have recovered, like a lost lens, our ancient religious values. This lens lets us see not human-drawn

distinctions – as if creation could ever be compartmentalized into a million discrete parts, each living in relative isolation from the others – but rather the interwoven wholeness of creation. Not surprisingly, when we can see past these man-made divisions, the work of protecting God's creation grows both easier and clearer."



"manatee"

"It unites all state, county and federal workers under a common moral goal. It erases artificial borders so we can see the full range of a natural habitat, whether wetland, forest, stream or desert expanse. And it makes us see all the creatures that are collectively rooted to one habitat, and how, by keeping that habitat whole and intact, we ensure the survival of the species. For example, in the Cascades, the spotted owl's decline was only part of the collapsing habitat of the ancient forests. When seen as a whole, that habitat stretched from Canada to San Francisco. Not one but thousands of species, from waterfowl of the air to the salmon in their streams, depended for their survival on the unique rain forest amidst Douglas fir, hemlock and red cedar. Our response was the President's Forest Plan, a holistic regional agreement forged with state and local officials and the private sector. Across three state borders, it keeps critical habitat intact, provides buffer zones along salmon streams and coastal areas, and elsewhere provides a sustainable timber harvest for generations to come."

"That's also the lesson of Everglades National Park...Only by erasing park boundaries could we trace the problem to its source, hundreds of miles upstream, where agriculture and cities were diverting the shallow water for their own needs. Only by looking at the whole South Florida watershed, could state and federal agencies unite to put the parts back together, restore the severed estuaries, revive the Park, and satisfy the needs of farmers, fishermen, ecologists and water users from Miami to Orlando. This holistic approach is working to protect creation in the most fragmented habitats of America..."

"...I'd like to say that the possibilities are limited only by our imagination and our commitment to honor the instructions of Genesis. But more and more, the possibilities are also limited by some members of Congress. Whenever I confront some of these bills that are routinely introduced, bills sometimes openly written by industrial lobbyists, bills that systematically eviscerate the Endangered Species Act, I take refuge and inspiration from the simple written answers of those children at the Los Angeles expo. But I sometimes wonder if children are the only ones who express religious values when talking about endangered species. I wonder if anyone else in America is trying to restore an ounce of humility to mankind, reminding our political leaders that the earth is a sacred precinct, designed by and for the purposes of the Creator."

"I got my answer last month. I read letter after letter from five different religious orders, representing tens of millions of churchgoers, all opposing a House bill to weaken the Endangered Species Act. They opposed it not for technical or scientific or agricultural or medicinal reasons, but for spiritual reasons."

"And I was moved not only by how such diverse faiths could reach so

pure an agreement against this bill, but by the common language and terms with which they opposed it, language that echoed the voices of the children."

• "One letter, from the Presbyterian Church, said: 'Contemporary moral issues are related to our understanding of nature and humanity's place in them."

• "The Reform Hebrew Congregation wrote: 'Our tradition teaches us that the earth and all of its creatures are the work and the possessions of the Creator.'

• "And the Mennonite Church wrote: 'We need to hear and obey the command of our Creator who instructed us to be stewards of God's creation.'

"And suddenly, at that moment, I understood exactly why some members of Congress react with such unrestrained fear and loathing towards the Endangered Species Act. I understood why they tried to ban all those letters from the congressional record. I understood why they are so deeply disturbed by the prospect of religious values entering the national debate. For if they heard that command of our Creator, if they truly listened to His instructions to be responsible stewards, then their entire framework of human rationalizations for tearing apart the Act comes to nought."



"paddlefish"

"I conclude...by affirming that those religious values remain at the heart of the Endangered Species Act, that they make themselves manifest through the green eyes of the grey wolf, through the call of the whooping crane, through the splash of the Pacific salmon,

through the voices of America's children. We are living between the flood and the rainbow: between the threats to creation on the one side and God's covenant to protect life on the other."

"Why should we save endangered species? Let us answer this question with one voice, the voice of the child at that expo, who scrawled her answer at the very bottom of the sheet: 'Because we can.'"

Religious Groups Following Babbitt's Lead

Calling the Endangered Species Act the "Noah's Ark of our day," the Evangelical Environmental Network (EEN) announce on January 31 a nationwide drive to create a movement of "Noah" congregations pledged to support the ESA. Leaders of the group were to meet in late January with Interior Secretary Babbitt and House Speaker Newt Gingrich.

In addition to EEN's efforts, the National Religious Partnership for the Environment -- a coalition of Evangelicals, Jewish, Catholic, Protestant, Eastern Orthodox and black church groups -- is organizing a mass mailing to urge clergy to start letter-writing campaigns. While many devout Jews and Christians reject environmentalism as "nature worship," evangelical Cliff Benzel says he believes many enviros "are people looking for spiritual answers."

Source: Greenwire Vol. 5, No. 182

The ESA and Recreational Fishing

The U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) have announced (December 12) a draft policy ensuring endangered species recovery while maximizing

recreational fishing opportunities. The policy, recommended by sportfishing advocates and endorsed by President Clinton in an Executive Order earlier this year, is aimed at improving Endangered Species Act (ESA) administration as it relates to recreational fisheries.

"In a few instances, especially in the West, the goals of recovering endangered species and providing recreational fisheries have been, or have been perceived to be, in conflict," explained Interior Secretary Bruce Babbitt. "While we remain steadfast in our commitment to endangered



species recovery, we are equally committed to ensuring that America's 50 million anglers can enjoy good fishing opportunities. This policy will guide us in doing both."

The proposed policy identifies measures the two agencies will take to ensure consistency in ESA administration:

- increase partnerships with other Federal, state, and Tribal fisheries managers;
- involve these groups in recovery planning and other actions taken for species listed, or proposed for listing, under the Act;
- increase public information

regarding requirements of the Act; and

- provide more fishing opportunities on Federal lands.

Habitat loss and degradation historically have been the biggest causes of fish declines and loss of recreational fishing opportunities. As habitat quality was compromised, many native species declined. Because of these declines, as well as public desire for specific types of fish, fisheries managers began introducing non-native fish favored by anglers. The risks associated with introducing non-native species were often not well understood, and in some situations, these fish have preyed upon or competed with native species and contributed to their long-term decline.

One purpose of this policy is to acknowledge that management of native and non-native fishes can be complementary or at least compatible in many situations, and to ensure that if conflicts arise, the agencies and partners will work together to resolve them.

Two components of the policy are especially designed to avoid or resolve conflicts. One is cooperating with states, Tribes, and other groups to provide comparable fishing opportunities when others are curtailed to protect listed species. The policy also aims to eliminate unnecessary restrictions involving stocking for recreational fisheries. For example, in areas where stocking may be restricted because the areas are part of a listed species' historical range but are not currently occupied by the listed species, the agencies would ensure consideration of the recreational fishery's importance as well as the recovery needs for the listed species.

The proposed policy was initiated by the Sport Fishing and Boating Partnership Council, established in

1993 to advise the Interior Secretary on recreational fishing and boating issues. The council is composed of 18 sportfishing and boating advocates from the private sector and state government agencies.

Contact: Chief, Division of Endangered Species, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 452, Arlington, Virginia 22203, (703) 358-2171; or the Chief, Endangered Species Division, National Marine Fisheries Service, 1335 East-West Highway, Silver Spring, Maryland 20910, (301) 713-2322.

USFWS Helps Landowners Protect Species

In a new plan that aims to address Endangered Species Act (ESA) concerns of Texas landowners, the U.S. Fish and Wildlife Service (FWS) will exempt property owners in 18 TX counties from "key habitat protection regulations" on land the owners restore and protect as coastal prairie for a decade or more. Biologists estimate that the coastal prairie ecosystem has disappeared from all but 1% of the 13 million acres it once occupied in TX and LA.

Landowners participating in the "Safe Harbor" program will have to leave land in restored prairie condition for at least 10 years. Even if a restored area has then attracted species under ESA protection, the owner may legally develop the added prairie habitat. But destroying endangered species habitat that was on the property before the restoration or directly killing a protected species will still be illegal.

The plan is only the second of its kind in the country, following one in NC, but the FWS hopes to start applying it more widely.

Source: Greenwire Vol. 5, No.

Publications on Endangered Colorado River Fish

Free publications are currently available on four species of endangered Colorado River fish. These fish occur nowhere else on earth. Color posters, brochures, newsletters, "historical accounts" booklets, fishing license holders and fact sheets can be ordered from the Colorado River Recovery Program.

Publications and materials available include the following:

- Newsletter about endangered fish recovery,
- Report on attitudes toward endangered fish,
- Fact sheets about endangered/native and non-native fish,
- Status report on recovery program activities,
- Color Poster of the Colorado River,
- Fishing license holder with map showing where endangered fish are found,
- Color brochure about endangered fish recovery,
- Angler information card with photos of endangered fish, and
- Booklet describing historical accounts of endangered Colorado River fish.

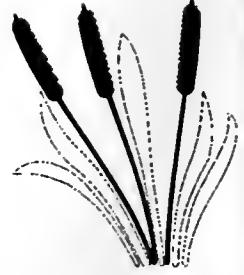
Publications can be ordered from: Colorado River Recovery Program, U.S. Fish and Wildlife Service, P.O. Box 25486, Denver, CO 80225; FAX (303) 236-0027.

Wetlands, Flooding, Federal Dollars, and Boondoggles

The following is an editorial from "The Tribune's View", Columbia Daily Tribune, Columbia, Mo., December, 12, 1995. We thought our readers would be interested in what it has to say.

"After the Flood of '93, the federal government offered money

to farmers who would convert croplands into wetlands. Now, after another round of flooding, so many farmers are seeking to enroll in the Emergency Wetlands Reserve Program that the feds are running out of money, renegeing on promises to pay and making farmers mad.



'How many things are wrong with this picture? Start with the misbegotten program of public levee building that protected untold thousands of acres from routine river flooding. By spending these billions, government geniuses gave land owners in the river bottoms a giant bonanza, encouraging them to farm and otherwise develop land that often would have been under water without official tinkering. The geniuses also screwed up river channels, forcing more and more water to rush downstream in an ever narrower space, spending ever more to maintain levees, ruining natural wetlands, interfering with wildlife habitat and generally asking for trouble sooner or later.

'Sooner-or-later came in 1993 when Midwest rivers finally broke through, ruining millions of dollars worth of levees and putting vast farmland acreages under water. The one good thing about the flood is that it finally taught the folly of public levee policies. Since it was impossible to rebuild all these structures, federal and state officials have been busy since trying to unravel the knotty situation they created.

'They have offered to buy out residents who would relocate on higher ground. And they have offered money to farmers who would convert flooded property to

wetlands.

'Levees should not be rebuilt at public expense, except where serious development in the public interest has occurred such as the Columbia water supply installation in the McBaine bottoms and well-populated river towns that need protection. Most rural land should be returned to its natural state unless private farmers want to build their own levees.'

'If the government simply does not rebuild levees wetlands development will take care of itself. Many or most owners will decide it's not worth it to build their own levees. A pattern of riverside wetlands will return.'

'However, the feds have gotten so deeply into the habit of subsidizing farmers that they are trying their best to do it again, and they would except for the mere fact that they've run out of money. Imagine! Finally even the federal government is having to decide not to simply do more deficit spending.'

'Since a certain amount of money already is committed, perhaps the government simply should split it evenly among all farmers who are willing to give a wetland easement. Those who don't think the payment is enough should be left alone. If they want to farm in the bottom, let them. If they want to rebuild levees on their own land, let them. But let them proceed without benefit of public levee protection. Under this scenario plenty of acreage will be farmed with much less intensity than before.'

'When the government can't figure out how to come up with a farm subsidy plan, everyone goes into a daze. The way, of course, is simply to quit making the payments and let farmers figure out how best to function on their own. Many will be better off. We will not suffer from lack of food and fiber. We will wind

down one of our most egregious welfare programs.'

'A good place to start rearranging our thinking is to quit dithering about wetland payments. If the government simply gets out of the levee business, it can stay out of the wetlands business as well.'

'The last thing we need worry about is creating wetlands in flood plains. Our problem is how to end government meddling.'

The GAO and Levees

After the 1993 flood Congress asked the General Accounting Office (GAO) to review:

- the extent to which the U.S. Army Corps of Engineers' flood control levees prevented flooding and reduced damage during that event;
- the amount the federal levees increased the height of the flooding and added to the damage; and
- the extent to which federal, state, and local governments exercise control over the design, construction, placement, and maintenance of nonfederal levees.

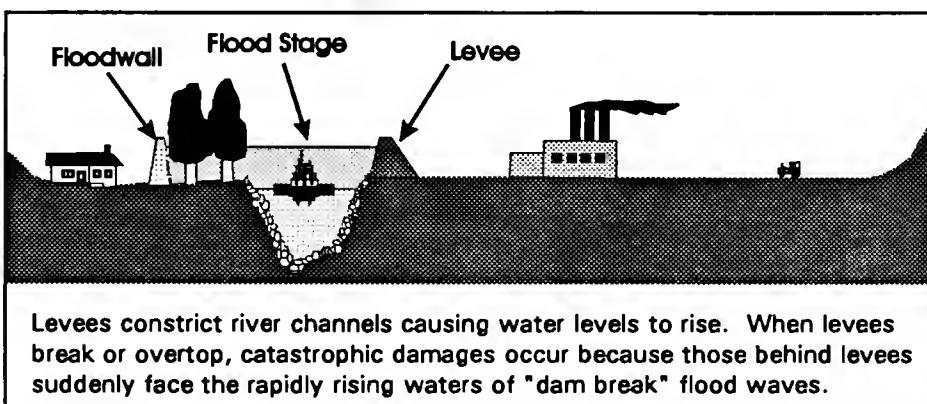
The GAO findings are contained in the report, "Midwest Flood: Information on the Performance, Effects, and Control of Levees" (GAO/RCED-95-125, 1995, 79 pp.).

According to Corps records, 157 of the 193 Corps levees prevented rivers from flooding

about 1 million acres and causing \$7.4 billion in damage. Another 32 levees withstood floodwaters until the water overtopped them, and four other levees were breached or otherwise allowed water into protected areas. The Corps estimated the damage caused by the overtopping and breaching of these levees to be about \$450 million.

The report notes that because a levee confines a flood, it causes floodwaters to rise higher than they would otherwise (See Figure Below). GAO cautions that the degree of impact varies by location and that many other natural and human-caused factors also affect the peak flood levels, including flood duration, amount of vegetation in the basin, sediment deposition, water temperature, urban development, agriculture, navigation, and developed wetlands. The Corps adds that, although their levees can increase damage elsewhere, the net effect of Corps levees and reservoirs in the upper Mississippi River Basin is to reduce flooding.

The report further states that studies indicate natural and human-caused changes within the basin have raised the levels of both the Mississippi and Missouri rivers. In addition, precipitation in the upper Mississippi River Basin appears to be increasing, prompting concern that the extent of flooding and related damage will increase. The report also describes federal, state, and local programs for regulating levees and



floodplains.

Free copies of the Midwest Flood Report can be obtained from the U.S. General Accounting Office, P.O. Box 6015, Gaithersburg, MD 20884-6015; (202) 512-6000, FAX: (301) 258-4066.

West Tennessee's Flood Plan Backfiring

One of our readers sent us a January 1993 by-line article by Tom Charlier of the (*Memphis Commercial Appeal*). Even though the article is more than three years old, it should be of interest to our readers.

According to the article, the West Tennessee Tributaries project, an ambitious \$43.5 million flood control project has resulted in more, not less, flooding for many farmers and communities.

Drawing on federal data to create before-and-after comparisons, two University of Alabama geography department researchers (David Shankman and Thomas Bryan Pugh) concluded that "channelization" of the Obion River more than doubled flood frequency on that river's lower reaches during growing seasons.

The Alabama researchers focused on the Obion, which flows into the Mississippi about 60 miles north of Memphis. As part of the long-controversial tributaries project, \$12 million were spent in the 1960's channelizing and straightening the Obion so that floodwaters could drain from a watershed more quickly. The entire tributaries project, authorized by Congress in 1948, envisioned channel work along 225 miles of the Obion and Forked Deer river systems.

Using the Corps' data, Shankman and Pugh compared river flows with corresponding rainfall events during 10-year periods both before and after channelization.

They concluded that channelization increased water velocity, and effectively decreased flooding in the upper portions of the Obion River. However, these same swiftly flowing waters reached downstream areas far faster than the channel could accommodate, resulting in higher "peak discharges" and increased flood frequency.

During the 10-year period before channelization, flooding during the May-to-October growing season averaged 0.5 times/yr, while after channelization flooding averaged 1.2 times/yr, an increase of 140%.

Channelization did reduce average flood duration from 3.3 to 1.3 days, but the researchers said that brief and intense floods still cause severe damage to agriculture, the protection of which was one of the main justifications for the tributaries project.

Reference: Shankman, D. and T. B. Pugh. 1992. Discharge response to channelization of a coastal plain stream. *Wetlands* 12(3):157-162.

Legal/Policy Issues Affecting Yazoo River Fisheries

Federal flood control projects on Mississippi's Yazoo River demonstrate the often conflicting goals of federal and state agencies and interests. A new report entitled, "Legal and Policy Regimes Affecting River Fisheries in the Delta Region of Western Mississippi" examines Constitutional and statutory authority for the Yazoo River Basin's flood control projects, their relationship to the public trust doctrine and navigation servitude, and the influence of relevant federal and Mississippi environmental laws on the projects' operation and maintenance with an emphasis on

fishery impacts. It also examines possible inadvertent, discriminatory consequences of the projects' design operation and maintenance.

Contact: Jeffery A. Ballweber, J.D., Fisheries Law Specialist, Water Resources Research Institute, P.O. Drawer AD, Mississippi State, Mississippi 39762-5529.

Gingrich Attacks River Pollution

House Speaker Newt Gingrich (R/GA) says Atlanta's continuing pollution of the Chattahoochee River is due in part to the city's "grotesque incompetence", and said the federal government has "every right" to step in and force a halt to the pollution.

In a "wide-ranging" discussion with a panel of Georgia environmental leaders who advise him, Gingrich said that he fought to stop Atlanta's pollution in his old congressional district, which included several counties downstream from the city. According to Gingrich, "The city of Atlanta not only is polluting downstream in the state of Georgia, but also is polluting downstream in Alabama and Florida and all the way to the Gulf." Gingrich said he wants a strong USEPA to stop such pollution, but said the agency was "still too bureaucratic and adversarial."

While the GOP has singled out the EPA for cuts, Gingrich said he agrees with an assessment sent to him late in January by 30 congressional GOP moderates who complained the party had "taken a beating this year over missteps in environmental policy". The group asked him to correct the course during budget talks.

Source: Greenwire Vol. 5, No. 181

Missouri River Plant Closed

A federal judge on January 5 approved a settlement between Asarco Inc. and the USEPA requiring the company to pay a \$3.5 million fine for discharging pollutants from its Omaha lead refinery into the Missouri River. The settlement cancelled a scheduled trial over a lawsuit that asked for the plant to be shut down because it was discharging lead, arsenic and other contaminants from 1989-1994 in violation of the Clean Water Act.



Asarco also agreed to pay an additional \$1 million to buy wetlands along the river, monitor lead levels in area soils and possibly monitor the blood of area residents. Asarco attorney Peter Nickels said the company was pleased with the settlement. Attorneys for the two local citizens who filed the original lawsuit said they would have preferred a higher fine, but considered the settlement a big environmental victory because it will reduce pollutants entering the river.

Asarco officials have said they plan to close the lead-refining portion of the plant by the end of 1996 to avoid spending the \$40 million it would take to bring it into compliance with air-quality standards.

Source: Greenwire Vol. 5, No. 170

Louisiana Scenic Rivers Act

In 1970, the Louisiana State Legislature enacted the Louisiana Scenic Rivers Act in an effort to preserve and protect the ecological and aesthetic values of certain free-flowing streams (or rivers) and segments of streams located throughout the state. The program is administered by the Louisiana Department of Wildlife and Fisheries (LDWF).

Scenic stream protection is primarily accomplished through the permitting of certain activities along designated waterways. The 1970 Act prohibited four activities in designated streams:

- channelization,
- clearing and snagging,
- channel realignment, and
- reservoir construction.

Any other activity which may have a significant adverse ecological impact may also be subject to review and permitting by LDWF Scenic Rivers Section.

In 1987, a Scenic Rivers Task Force was formed to review and revise the 1970 Act. The revised Act, enacted in 1988, added one additional prohibition - commercial clearcutting of timber within 100 feet of the designated stream's low water point. Additionally, the Act revised the permitting process and required that a management plan be developed for each Scenic Stream or Scenic River. Today, there are 52 waterways designated as Natural and Scenic Rivers in Louisiana.

The majority of riparian lands and some waterbottoms along and in designated Scenic Rivers are privately owned. Private landowners, therefore, are key to the success of the program. LDWF biologists indicate that there is a perception among landowners that a Scenic Rivers designation will prevent them from using their land as they see fit. According to LDWF, the Scenic River System goal is not to

prohibit landowners from doing what they want on their property but to cooperate with individuals so that landowners conduct activities in a way that is the least damaging to the environment.

As of May 1995, management plans have been developed for all 52 designated waterways. LDWF is now in the process of conducting statewide public meetings to obtain riparian landowner input that will be used to revise each management plan.

Contact: Louisiana Department of Wildlife and Fisheries Scenic Rivers Section at (504) 765-2821.

Deep-Water Fish Sampling Methodology

Bendway weirs are an innovative, successful, and cost effective means to maintain a safe and dependable navigation channel on the Mississippi River. These weirs significantly improve navigation conditions around bends by creating desired navigation channel dimensions.

Although, more than 100 of these structures have been placed in 13 bends of the Mississippi River, their effects on the aquatic environment had not been evaluated. Of particular concern was the effect of the weirs on the pallid sturgeon, a fish species protected under the Endangered Species Act.

A major obstacle in collecting these data was sampling in deep water, high velocity environments. Conventional sampling techniques, such as electrofishing and netting, generally have been limited to depths less than 20 ft. and velocities below 2 to 3 ft./sec. In a bendway weir field, depths can exceed 50 ft., and velocities can exceed 6 ft./sec.

A Deep Water Sampling

Committee (DWSC), consisting of representatives from the Corps of Engineers St. Louis District and Lower Mississippi Valley Division, Waterways Experiment Station, U.S. Fish and Wildlife Service, Long Term Resource Monitoring Program, Missouri Department of Conservation, Illinois Department of Conservation, and Southern Illinois University was formed in 1994 to identify potentially useful sampling methods. These included explosives, shocking, gill netting, trammel netting, trotlining, and hoop netting.

The DWSC decided on using explosives as potentially the most effective sampling technique. Placement of explosives, weighting of the nets, and anchoring of trotlines was completed using conventional buoy blocks from the M.V. Pathfinder. The Pathfinder also assisted in collecting the nets. Each agency provided at least one catch boat to capture fish after the charge was detonated. In such swift current, fish could surface many hundreds of feet downstream, so several boats were required to effectively cover the area.

On 19 September 1995 a 300 ft. section over a bendway weir field was sampled. Preparations for the sampling (placing charges and catch nets), took approximately 6 hours. When the explosives were detonated fish immediately began surfacing. In all, 217 fish of 13 different species were captured, including 75 fresh-water drum up to 20 pounds, 58 gizzard shad, 24 blue catfish up to 35 pounds, and numerous other species, including one sturgeon.

Other collection methods generally resulted in reduced catch rates. The initial consensus was that current velocity and sediment movement in bends cause nets to move too much or become silted over. These methods will be reevaluated and modifications will be made before

they are tested again.

The alternative method with the most promise consisted of rigging an electro-shocker on the bow of the M.V. Pathfinder. This shocker could be lowered to depths exceeding 40 feet and a charge induced through the electrodes to stun fish. A specially designed net captures the fish. This method worked exceptionally well when the boat was stationary. Although further modifications will be required to allow more maneuverability, this procedure has potential for future use.

Source: LMRCC Newsletter, Volume 2, Number 4, December 1995

Ecosystems At Risk

No part of the U.S. is safe from wildlife losses and the Mid-Atlantic region is at "high" risk of losing all its wild lands within a decade, according to a new report by Oregon State University's Reed Noss and the Defenders of Wildlife's Robert Peters.

In 10 of the nation's fastest growing states, the next decade will determine whether any wild lands survive at all, the report says. The report ranks FL, CA, HI, GA, NC, TX, SC, VA, AL and TN as being at "extreme" risk of losing their natural heritage. The authors based their rankings on

- the pace of development,
- the amount of land lost,
- the condition of remaining wild lands, and
- the number of endangered and threatened species.

The report argues for the preservation of natural areas, saying they provide

- new sources of food and medicine,
- protection from natural disasters,
- recreation,
- and jobs.

Nationwide, more than 1,000 plants and animals are on the endangered species list and 4,000 more are candidates for inclusion on the list. According to Peters, "Unless we turn things around very soon, within the next decade, we will lose something very essential to the American character."

The report calls for new methods of preserving whole landscapes, rather than individual parts. While the authors admit this isn't a good time to propose new laws for endangered ecosystems, they hope the report will "help put conservation of ecosystems on the national agenda".

Source: Greenwire Vol. 5, No. 162

Livestock Wastes

North Carolina state courts shut down two livestock farms and threatened to close another in three legal decisions announced in December by state Attorney General Mike Easley. The rulings stemmed from lawsuits filed by Easley as part of "a continuing crackdown on polluters in the livestock industry."

The rulings target hog and dairy farms that have been accused of dumping large quantities of animal waste into nearby streams and swamps. J&H Milling Co., a 12,000-head hog operation near Walstonburg, and Sexton Dairy Farms in Henderson County were ordered to shut down, while another farmer was given a 10-day deadline to develop of clean-up plan for his hog farm.

State officials have also vowed to take action against up to 200 other operations that have been found to be dumping waste into rivers deliberately or through extreme negligence. Easley said, "I have lost my patience with polluters who put profits ahead of the public's well-being. If state

inspectors continue to find animal operators who break the law, we will continue to shut them down".

However, former NC state Representative Tim Valentine (D) said on January 18 that he is prepared to quit the state commission on hog farming, which he co-chairs, if the panel doesn't move soon toward serious reform of the state's swine industry. Some critics have complained that the Blue Ribbon Study Commission -- an 18-member panel appointed by Governor James Hunt (D), House Speaker Harold Brubaker (R) and Senate President Pro Tem Marc Basnight (D) -- is "weighted toward the swine industry, with



five hog farmers and eight members who have personal or professional ties to pork." The panel is slated to deliver recommendations in May.

In Missouri, state Representative Phil Tate (D), an early booster of big hog companies, filed a bill on January 18 that would increase inspections and impose a 2 cent/animal tax to finance them. State Representative Thomas Marshall (D) has also introduced a bill to establish a commission within the state Department of Agriculture with broad powers to regulate operations with more than 15,000 animals.

In Iowa, Gov. Terry Branstad (R) is fighting a state Senate effort to allow county supervisors to regulate large livestock confinements through zoning ordinances. Branstad says a 1995 livestock-regulation bill -- which sets spacing requirements

and forces operators to submit detailed plans for manure disposal -- is adequate to control hog-waste spills. But the Iowa Senate Agriculture Committee earlier this month approved a bill to allow supervisors to use zoning laws to block some proposed confinements.

Source: Greenwire Vol. 5, Nos. 182, 178

Natural Cleanups for Underground Tanks?

Natural processes in the ground remove most of the toxic ingredients left by underground petroleum leaks, according to a new report "which has the backing of the (USEPA) and some funding from the oil industry."

The year-long study of 1,500 contaminated sites in California "minimizes" the dangers of leaking storage tanks and "takes direct aim at the assumption" that benzene, a cancer-causing component of petroleum, threatens the state's water supply.

The study, conducted by the Lawrence Livermore National Laboratory and funded by a \$300,000 EPA grant and a \$30,000 grant from Shell Oil, found "fuel hydrocarbons (in soil) have limited impacts on human health ... (and) the costs of cleaning up FHCs are often inappropriate when compared to the magnitude of the impact on ground-water resources." According to report co-author David Rice, "The real point here is that in many cases natural processes degrade fuel hydrocarbons at approximately the same rate as technology."

While the report concluded that only 0.0005% of California's total ground water was impacted by high benzene levels, it did not rule

out treatment in every case. Of 12,151 wells tested, 48 had measurable benzene levels. But Rice "conceded" that the study was limited to the kind of soil found under the state's largest metropolitan areas, where most gas stations and tanks are located. He said researchers did not look at what happens to contaminants in sand, gravel or fractured bedrock.

The report prompted California Governor Pete Wilson's (R) administration to halt its "costly" underground-storage-tank cleanup program. While 75% of the state's 28,000 contaminated sites have not been cleaned up, under the new policy, most of the remaining sites "probably won't be cleaned up, except for removing the leaking tanks," according to officials of the California Water Resources Control Board.

Enviros accused the Wilson administration of acting irresponsibly. According to the Sierra Club's Bonnie Holmes, "This could shut down treatment of 80 to 90% of all sites with virtually no investigation of many of them." And some regional water officials say that CA is moving too fast, acting on the basis of a narrowly focused study that looked at just one of many types of contaminants.

Patricia Eklund, chief of underground storage tank regulation for the EPA's western region, applauded the state's reaction to the study, "They are going to focus their efforts on the high-priority sites, and that's as it should be".

Source: Greenwire Vol. 5, No. 169

Grazing Issues

The U.S. Forest Service (USFS) and the National Wildlife Federation (NWF) have reached an

out-of-court settlement in a lawsuit alleging overgrazing on the Humboldt National Forest in Elko County, NV. The NWF sued the USFS last March, claiming the agency had not enforced 1990 livestock grazing standards.

Under the settlement, USFS will conduct site-specific studies of livestock allotments in the habitat of Lahontan cutthroat trout, elk and sage grouse.

The new standards will use cattle impact on riparian zones to determine when livestock must be removed from an allotment. The old rules allowed cattle to stay on grazing lands for a predetermined time period. Ranchers argue that it's impossible to measure livestock grazing accurately or consistently, and contend that the new rules will produce "arbitrary" decisions. But NWF says the settlement will protect sensitive forest areas from livestock damage. The settlement was approved by the NV Cattlemen's Association and the NV Land Action Association. It must now be approved by a Reno, NV federal judge.

Meanwhile in Washington, "Despite Democratic opposition," the U.S. Senate Energy and Natural Resources Committee approved legislation in late November to impose new grazing fees and establish revised federal land management policies for ranchers. Sen. Pete Domenici (R/NM) "pleaded" with his colleagues to help "maintain a way of life" for Western ranchers. The committee approved Domenici's bill over the objections of New Mexico's other senator, Jeff Bingaman (D).

The measure now goes to the Senate floor, where Democrats said they hope to make changes to the bill "they described as not going far enough." Under the bill, grazing fees would increase 30%, to \$2.10 a month for each animal unit, "far below" Clinton administration requests. The

House has yet to act on its version of the grazing bill, designed to replace regulations issued in August by Interior Secretary Bruce Babbitt.

In the meantime, the Interior Department announced on January 22 that the 1996 monthly cost for the right to raise a cow or five sheep on federal rangeland will drop from \$1.61 to \$1.35. The 16% reduction is based on a complex formula that takes into account market prices for livestock and forage, and reflects the generally depressed state of beef and lamb markets. For the 27,000 ranchers who use federal land, this will be the second substantial decrease in a row; just two years ago the fee was \$1.98 per month. The 1996 fee would have been lower except



for an executive order signed by President Reagan that placed a \$1.35 minimum on the fee. Without the floor, ranchers could have paid \$1.29 a month.

Source: Greenwire Vol. 5, No. 148, 162, and 175

Tensions Rising In Western Resource Battles

Members of the gun-toting Environmental Rangers, a group at the "most extreme edge" of the enviro movement, see themselves as the last line of defense for the environment and are prepared to put their lives on the line to protect Northwest lands and waters.

Ranger leader Ric Valois and his "army of citizens," estimated to number several dozen, have vowed to stop the Phelps Dodge Mining Co. and Canyon Resources Corp. from digging a mile-wide, 675 ft. deep, \$1.8 billion gold mine 800 yds. from Montana's Blackfoot River. According to Valois, "They're not getting these places without a war. And I mean a real war." But Valois "said the group's policy is to avoid violence except as a last resort."

Mine company officials say state-of-the-art enviro-protection techniques will not allow any cyanide to leach into the river or ground water. But critics say cyanide heap leaching "has a history of spills and leaks at mines" throughout the U.S.

While recent decisions in the courts and Congress have diminished many traditional avenues of protest for enviros, "most groups have renounced violence in favor of political activism or civil disobedience." But as the uneasy climate in the West continues to brew, some say conflict may be inevitable.

The Zortman-Landusky mining complex in MT's Little Rocky Mountains has upped security after receiving "veiled threats" from Environmental Rangers wearing military-style uniforms and sidearms at public meetings.

In NM, a January 6 explosion that ripped through a U.S. Forest Service office was set deliberately according to an FBI report. The blast caused about \$25,000 in damage, blowing out a window and cracking a rear wall; no one was injured. No arrests were made and the type of explosive used was not identified.

The USFS has been "embroiled" for months in NM in a dispute between enviros and traditional Hispanic families over logging and firewood gathering in the state's northern national forests. In

August, a federal judge in Phoenix banned logging in 11 national forests in NM and AZ pending a study on the Mexican spotted owl. But some firewood gathering bans were lifted since many New Mexicans use wood for heating and cooking.

In Congress an "intraparty rift" has also reportedly developed between Western GOPers and their "deficit-minded party colleagues" over logging, grazing and mining rules. Republican deficit hawks "tend to view public land timber sales, grazing permits and mining projects as untenable federal subsidies in a time of welfare and Medicare cuts." This split poses "a prime threat to a host of public land initiatives favored by traditional Western economic interests."

House Speaker Newt Gingrich (R/GA) "has expressed displeasure over the political liability caused by the Western push to weaken the Endangered Species Act and other environmental standards." And House Budget Committee Chairman John Kasich (R/OH) said public land programs such as timber sales and grazing permits must show a budget surplus or they will be curtailed.

Source: Greenwire Vol. 5, No. 168, 170, 175

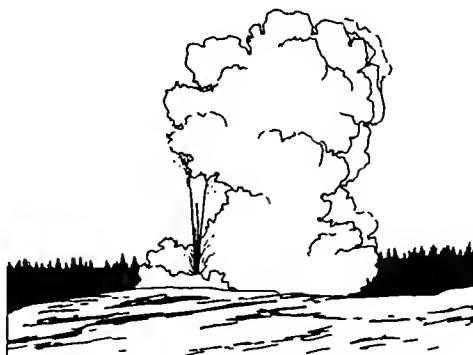
Yellowstone Mine Update

The UN's World Heritage Committee on December 5 designated Yellowstone National Park a "world heritage site in danger", in part due to the proposed New World gold mine on the border of the park. The committee is an independent panel affiliated with the UN Educational, Scientific and Cultural Organization. Yellowstone National Park was designated a world heritage site in 1978 by the committee, which is made up of scientists and government officials. The

committee visited the mine site in early September.

The committee's finding that Yellowstone is now in danger "in theory" commits the federal government to protect the park because World Heritage sites are supposed to receive special protections. But the committee's action does "not supersede any U.S. law" and it will "have no effect" on the environmental impact statement (EIS) on the proposed New World Mine now underway, according to the Interior Department. The EIS is expected early this year.

Senator Conrad Burns (R/MT) says such a designation is "just



ridiculous". In a press release Burns said, "It is astonishing that a group of extreme environmentalists can invite in a few folks from the United Nations to circumvent laws that Americans and Montanans have worked hard for and lent their voices to." Joseph Baylis, president of Crown Butte Mines, the Noranda affiliate that is overseeing the mine project, also dismissed the World Heritage finding as "not a legitimate scientific and technical review" of the mine proposal. He criticized the committee for making the designation before release of the draft environmental impact statement.

Baylis said that contrary to claims by some, the mine will not use

cyanide to leach gold from mined rock. And while critics have said acidic tailings would spill into the park, Baylis said the company's plan ensures nothing from the mine would enter the park. A spokeswoman for the National Parks and Conservation Association said fears of the UN's role have been exaggerated.

Crown Butte Mines recently asked Montana to temporarily relax water quality standards on a pair of streams near the New World Mine site that are "already heavily polluted by abandoned mines in the area. Crown Butte applied for a permit under a new state law that allows MT to adopt temporary standards for water that is so polluted it cannot support its intended uses. The company offered to clean up the two creeks within the next 20 years.

A December poll taken of 817 registered Montana voters for the Billings Gazette revealed that 48% said economic benefits would not outweigh possible enviro damage from the proposed New World Mine. "Only 29% favored" Crown Butte Mines Inc's gold and silver mine. The margin of error was +/- 3%. Other "opinion surveys ... indicate women oppose mining by far greater margins than men."

Skepticism about the mine is "surprisingly plentiful" in Cooke City, MT, the 80-person town that would be in the mine's shadow according to James Brooke of the N.Y. TIMES. The criticism reflects "a growing hostility toward mining in ... a state that is shifting its economic base from mining to tourism." Opponents of the mine say it would "mar tourism" for the visitor-dependent town.

The New York TIMES remains skeptical of the mine, "After listening patiently to [Crown Butte's] safety pitch, this page is convinced that the proposed New

World Mine is a disaster-in-waiting that could ruin one of America's leading ecosystems".

Source: Greenwire Vol. 5, No. 151, 153, 154, 168

Guyana Gold Mine Tailings Dam Breaks

A tailings dam, owned by the Canadian mining firm "Cambior", storing toxic effluent from a gold mine similar to the one proposed for the Canadian owned New World Gold Mine near Yellowstone National Park ruptured in Guyana on August 20. The broken dam spilled an estimated 1.23 million m³ of cyanide waste into Guyana's largest river.

Some 18,000 people living along the Essequibo River and its tributary, the Omari, were warned by health officials not to touch or drink the water or eat its fish. At least 100 km of river were effected, including the land inhabited by the Akawaio Indians and other indigenous tribes. President Cheddi Jagan declared the area an "environmental disaster zone," and called for international assistance.

"This is the world's worst mine-tailings spill, in terms of amount spilled, in the past 25 years," said Roger Moody, a leading expert on the environmental impacts of mining. As director of the London-based group Minewatch, Moody had warned last spring that such a spill was likely at the Omari tailings dam. Cyanide-treated waste also spilled into the river in May this year killing hundreds of fish. Cyanide, used to extract gold from crushed rock, can be fatal in concentrations above 2 ppm; lower doses ingested over time can cause mental retardation. The spill's cyanide concentration was 15 ppm on the first day of the crisis; but by day two, it was diluted to 3 ppm.

Observers saw shoals of dead fish and hogs floating down the river. Meanwhile, the Canadian owners of the mine, Omai Gold Mines Ltd., released a statement saying, "At the present time there is no threat to the residents downstream from Omai in the Essequibo River."

Despite its own upbeat statement, mine officials distributed drinking water and warned residents to avoid the river. But it is doubtful that they were able to reach all river-dependent residents in the remote rainforest. "My fear for the community is that there are many people who depend on the river who cannot be reached by phone, television or radio, and will not have access to the information about not using the water or eating the fish," said Jean La Rose of the Amerindian Peoples Association in the Guyanese capital of Georgetown.

In addition to the immediate impacts of releasing cyanide into the river, there may be longterm ones as well. The toxic waste was diverted during the emergency into mine pits, which are not designed to contain water waste, making it possible that the poisons will leach into groundwater. Also, heavy metals such as arsenic, cadmium and mercury were part of the slurry released into the river. As they settle out onto the riverbed, the highly toxic metals may enter the human food chain through plants and fish.

Tailings dams are often poorly built, and have a deplorable record of collapses and leaks. Failures of tailings dams have killed hundreds of people in recent years, including 269 in Italy in 1986, 47 in South Africa in 1994, 125 in the U.S. in 1972, and nearly 100 in Bulgaria in 1966.

Source: World Rivers Review, Aug. 1995

EPA Needed More Now Than in 1970

Eighty-six percent of Americans think the USEPA is needed as much as or more today than it was when it was founded in 1970, according to a poll released on December 6 by Louis Harris & Associates. Harris CEO and Chairman Humphrey Taylor said the poll shows the public "is strongly supportive of environmental policies and environmental regulation which is at least as strict as it is today. There is no mandate for taking powers away from the EPA or for weakening the powers of environmental regulators." The poll surveyed 1,007 adults nationwide from November 2-6; margin of error is about +/-3% (Harris Poll release, 12/6).

Do you think the USEPA is needed more today, equally or less than it was when it was founded 25 years ago?

	Total	GOP	Dem	Ind
More	56%	46%	60%	58%
Equally	30	30	32	29
Less	13	24	8	12
Not sure	1	-	1	1

Does government policy favor jobs or the environment too much?

	Now	4/95	1993
Favors jobs	35%	29%	32%
Favors env't	20	24	24
Balanced	42	43	38
Not sure	3	4	5

How much confidence do you have in the ability of this institution or person to protect the environment:

	A great deal	Only some	Hardly any	Not sure
1. Enviro groups like Sierra Club, Audubon Society	33%	51%	13%	2%
US EPA	22	66	11	1
VP Gore	18	56	24	1
President				
Clinton	16	64	19	1
State and local gov'ts	16	69	14	<.5
Business	7	46	45	2

GOP-controlled Congress

7	55	36	2
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How much health risk do you think there is in:

	A great deal	Some deal	Not much at all	None at all
Living near hazardous waste site	82%	15%	3%	<.5%
Living near factory/industrial area	46	44	8	2
Living near high traffic area	41	45	10	3
Garden chemicals	40	43	14	3
Living near power lines or a transmission station	31	41	20	8
Drinking tap water	19	44	25	11

How much difference can individual everyday actions like recycling and conserving water make in the quality of our environment?

Big difference	76%
Small difference	21
No difference at all	2
Not sure	<.5

Source: Greenwire Vol. 5, No. 152

Environmental Rules Good for Business

By a margin of 57% to 19%, New England business leaders agree that most efforts to protect the region's environment are good for business, a new poll has found. Twenty percent of respondents neither agreed nor disagreed with the assertion.

The survey of 514 New England business leaders, conducted by Northeastern University's College of Business Administration and The New England Council, also asked respondents to rank tax, budget and workplace issues that are important to the region's economy and deserve to be addressed by presidential candidates. Superfund was listed among the top four priorities by

8.4% of respondents, Clean Air Act reforms by 6.8% and Clean Water Act reforms by 5.5%, putting them at 15th, 18th and 20th respectively on the list of most important issues. Balancing the federal budget by 2002 was the most cited issue, with nearly 60% of the executives listing it among their top four priorities.

The survey, conducted by mail in November, had a 34% response rate and a 5% margin of error.

Source: Greenwire Vol. 5, No. 154

Spotted Owl Protection Hasn't Hurt Economy

Logging restrictions to protect the CA spotted owl have not slowed economic growth in the Sierra Nevada, according to a study released on December 7 by the Natural Resources Defense Council (NRDC). Timber jobs account for 1% of employment and personal income in the 17-county region, and the loss of about 800 lumber-mill jobs since 1991 has been far outpaced by growth in retail trade and other services, the group says.

NRDC looked at employment, income and timber harvest statistics compiled by the state



and federal governments. NRDC's Sami Yassa said, "Individual job losses ... should not be undervalued or understated. But it's critical that policy decisions

not be based on fallacies that forest protection results in economic impacts."

But Don Zee of the California Forestry Association disagreed, "Their economic arguments are completely bogus. I think it's an arrogant attitude by people at NRDC. To refer to the timber industry as insignificant is, in my opinion, referring to the timber families [as] insignificant." He said there has been a 60-70% reduction in trees logged from the Sierras since 1991. When spotted-owl protections took effect in 1991, the timber industry "predicted the loss of 10,000 jobs and economic havoc" in the region.

Source: Greenwire Vol. 5, No. 154

Tax on Polluters Proposed

Worldwatch Institute's Lester Brown called for a new tax on polluters in his group's annual "State of the World" report. Brown's proposed tax would be levied on facilities that:

- emit carbon dioxide,
- clearcut forests,
- generate toxic waste, or
- have other negative environmental impacts.

According to Brown, "Now that tax surpluses are giving way to scarcity ... tax systems need to be adjusted accordingly." The report notes that Denmark, the Netherlands, Spain, Sweden and the United Kingdom have begun to shift their tax base from income to environmental taxes.

The tax burden for business would not increase if governments would cut other corporate and personal taxes, Brown said. If environmental taxes were established and subsidies were phased out, personal and corporate income taxes could be cut by \$1 trillion, the group predicted.

But some industries likely to be hit by green taxes, such as utilities and chemical companies, are not enthusiastic about the idea. Paul Tebo, Du Pont's VP for the environment said, "We're in favor of the price of goods and services that we offer reflecting the full environmental impact that they impose on society. But a tax is not the best way to do that".

The insurance and banking industries are also becoming increasingly at odds with the petroleum industry on the issue of climate change, the Worldwatch report found. In the last five years, insurers have paid out \$48 billion for weather-related losses, compared with losses of \$14 billion for the entire decade of the 1980s. Brown conceded that some of the increase was due to more coastal development and higher real estate costs, but he said that the factors "do not begin to match the increasing [risk] the insurance industry is facing." As a result of their losses, some insurers are "joining the call to slow climate change," the report said.

Worldwatch called the insurance industry's new role a "potential watershed" in the climate change debate.

Source: Greenwire Vol. 5, No. 171

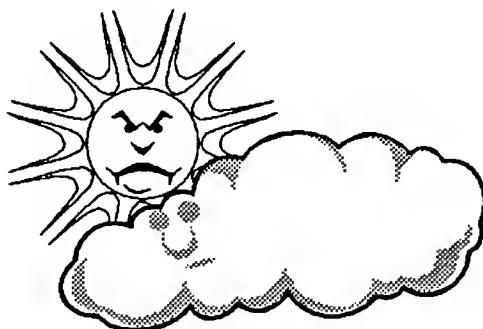
Final Climate Report Released

The Intergovernmental Panel on Climate Change (IPCC) agreed on December 15 to a final 28-page summary report stating that "the balance of evidence suggests that there is a discernable human influence on the global climate". Governments and international negotiators will use the report as a guide in making decisions about how much to reduce greenhouse gases emissions.

IPCC Chairman Bert Bolin said

there was considerable debate before the document was approved, with both nations and interest groups proposing many additional amendments. The report predicts temperatures will rise between 1.8 and 5.4° F by the year 2100. Energy efficiency should be increased as a first step, while fossil fuel use should be reduced over the long run. "Controversially, the report did not rule out the use of nuclear energy as a means of combatting carbon dioxide emissions".

According to Environmental Defense Fund's Michael Oppenheimer, "Today's news clearly puts to rest any claims by special interests far outside the scientific mainstream that human-caused climate change is



not a problem".

Climate scientists see the world's glaciers as "star witnesses in the complicated debate about global warming," saying they are "key indicators" of climate change that are "more reliable than climate models.". The well-monitored glaciers of the Alps have shrunk by one-third to one-half over the past century, according to various estimates. But scientists at the World Glacier Monitoring Center in Zurich say little is known about glacial ice, which covers 10% of the Earth's surface. Some of the largest mountain glaciers in Alaska, Patagonia and the Himalayas are "little studied."

Because record-keeping is spotty and relatively new, it is too early

to draw conclusions about the causes of recent melting, said Wilfried Haeberli of the World Glacier Monitoring Service. The picture is also "complicated" by reports that glaciers in Scandinavia, Greenland, Iceland and New Zealand are growing.

Danish geologist Anker Weidick refutes arguments that Arctic ice is melting, saying Greenland's "great ice towers and the main ice sheet are relatively stable or growing." But British scientist John Houghton, a member of the UN Intergovernmental Panel on Climate Change, says global warming could melt glacial ice in some areas and increase it in others. According to Houghton, "A warmer world is a wetter world. This means we get more snow and ice near the polar regions".

Meanwhile, a 4.5° F increase in Antarctica's air temperatures has caused five coastal ice shelves to break up in the last 50 years, including one that lost 400 square miles of ice in 50 days, according to a new study published in "Nature" by David Vaughn and C.S.M. Drake of the British Antarctic Survey (BAS).

The Antarctic temperature rises cannot be directly linked to human-induced climate changes, but the "pattern ... is exactly what we would expect if it was caused by a temperature rise," said Vaughn. If temperatures continue to increase, other Antarctic ice shelves could break off, a process that could speed the runoff of ice from Antarctica and lead to "drastic effects".

James Hansen of the Goddard Institute for Space Studies said the BAS researchers' finding that ice shelves break up more rapidly once past a certain point of warming could indicate that land-based glaciers may disintegrate more rapidly than previously thought. According to Vaughn, "It's something worth

thinking about".

According to "some experts," a warming atmosphere will also cause increased evaporation of ocean water, which will then lead to increased precipitation levels. Additional evaporation also "releases more energy into the atmosphere, making storms more powerful." "If the scientists are right, extreme weather will be a hallmark of the changing climate, and in fact may be the most common way in which people experience global warming," reports William Stevens in the N.Y. TIMES.

The Blizzard of 1996 in the east "does indeed qualify as one type of extreme weather to be expected in a warmer climate." According to Thomas Karl of the NC-based National Climatic Data Center, "It's another statistic to add to the record [of extreme precipitation]. It's rather interesting. We seem to be getting these storms of the century every couple of years." Researchers there last year found that from 1980-94, the incidence of extreme one-day precipitation, overall precipitation and above normal temperatures had risen in many areas of the U.S.

Source: Greenwire Vol. 5, No. 159, 160, 171, 179 and 181

Ohio River Fisheries Management Team

The Ohio River Fisheries Management Team (ORFMT) was organized in 1990 in response to the U.S. Supreme Court's ruling on ownership of the river and the mandated concurrent jurisdiction. The ORFMT consists of fisheries leaders and biologists from the six boundary states responsible for managing the River's fisheries.

Originating in Pittsburgh, Pennsylvania at the confluence of the Allegheny and Monongahela Rivers, the Ohio River serves as

the shared boundary between OH and WV, as well as the shared boundary between the Commonwealth of Kentucky and the states of IL, IN, and OH. While the authority and responsibility for protection and management of the River's fishery is vested in the individual states, fish are mobile and take no regard for political boundaries. The Ohio and its fishery are therefore truly interjurisdictional resources.

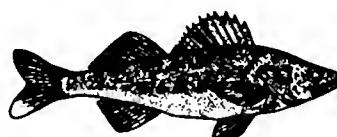
Leaders from the six states recognized their common concerns for the River's fishery, and that the effectiveness of each state's long-term fisheries management efforts could be substantially enhanced through the collaborative pooling of resource information and management programs to the fullest extent possible.

The ORFMT meets 3-4 times annually to:

- develop shared fisheries management objectives,
- coordinate regulatory responsibilities,
- conduct joint management programs, and
- facilitate technical information exchange among the states and with other governmental, public and private interests on the Ohio River.

The ORFMT has:

- standardized fishing regulations for black basses, walleye, and sauger among each state;
- completed a creel survey of 491 miles of the river between KY, OH, WV, and IN; and
- published an Ohio River Fishing Guide.



"walleye"

The Ohio River Fishing Guide will be important to the Team's

continuing effort to improve Ohio River fishing and to provide fisheries information to river anglers. According to the Guide, the Ohio River and its tributaries provide some of most varied fishing in the United States. At least 159 species of fish have been reported from the river; 25 species are considered sportfish and are caught by anglers along some portion of the river.

Fisheries biologists separate the river into three segments:

- the upper 300 miles to Huntington, WV;
- the middle 300 miles between Huntington and Louisville, KY; and
- the lower 400 miles from Louisville to the Ohio River/Mississippi River confluence.

The gradient of the upper river is greater than that of the middle and lower river. As a result, currents are faster and there are more locks and dams and tailwaters in the upper river (10) than in the middle (4) and lower (6) river. Embayments or backwater areas are more abundant in the lower river than in the upper river.

The pools comprise 99% of the River, but are not the best places to fish. A 1992 recreational use survey along the Ohio segment of the river revealed that 67% of the fish were caught from the tailwater areas - less than 1% from the river! The recreational survey revealed that the most sought after fish are the black basses followed by hybrid striped bass/white bass, sauger, and walleyes. Catfishing was most popular in the middle river and black bass fishing in the upper river.

A delegate from the ORFMT represents the Ohio River on MICRA's Executive Board. The ORFMT is thus MICRA's access to issues and activities on the Ohio River, and MICRA is the ORFMT's access to other groups and states basinwide.

North American Native Fishes Association

The North American Native Fishes Association (NANFA) is a national organization recently formed to address the needs of native North American fishes. The NANFA publishes a bimonthly newsletter called "Darter".



"river darter"

According to a recent article in "Darter" (Sept.-Oct. 1995, Number 14) regionalization of NANFA is the key to its future as an organization. "This will enable small groups of like-minded individuals to gather and share resources, collect, trade, and address environmental concerns."

"Regions may consist of several people in one state or several

people in one metropolitan area.

Each region will have a representative who will recruit members, arrange regional gatherings on an annual basis, and possibly represent NANFA in other functions. The first goal will be 25-30 reps by this time next year..."

Contact: Robert Schmidt, Simon's Rock Bard College, Afford Rd., Great Barrington, MA 01230.

Aquatic Conservation Network

Aquatic Conservation Network (ACN) is a nonprofit corporation dedicated to conserving aquatic life with an emphasis on freshwater fishes. Activities and functions include networking, science forum, conservation and captive breeding programs, and liaison between scientists and interested individuals.

Publications include a quarterly

bulletin, *Aquatic Survival and Captive Breeding Guidelines*, which provide the basics of being a conservation Aquarist.

A recent news release highlighted the Affiliate Club Program.

Objectives include:

- instilling a sense of stewardship into fish keeping;
- encouraging proper and optimum care of aquarium fish;
- intensifying the focus on the conservation of aquatic biodiversity; and
- fostering initiatives aimed at preventing the extinction of freshwater fishes.

Contact: Rob Huntley, General Manager, ACN, 540 Roosevelt Ave., Ottawa, Ontario, Canada K2A 1Z8, (613) 7294670, FAX (613) 729-5613, Email: ag508 @freenet.carleton.ca, or World Wide Web:
<http://www.nct.carleton.ca/freeport/social.services/eco/orgs/aquat-con/menu>.

Source: DARTER, Sept.-Oct. 1995, Number 14

Meetings of Interest

February 27-March 1: 27th Annual International Erosion Control Association Conference and Trade Exposition, Sheraton Seattle Hotel and the Washington State Convention and Trade Center, Seattle, WA. Contact IECA, P.O. Box 4904, Steamboat Springs, CO 80477-4904; 1-800-455-IECA, FAX (970) 879-8563.

March 5-7: 52nd Annual UMRCC Meeting, Holiday Inn, Cape Girardeau, MO. Contact: Jenny Frazier, 3815 E. Jackson Blvd., Jackson, MO 63755, (573) 243-2659, FAX (573) 290-5736.

March 11-13: "The Mighty Missouri - Past and Future", 25th Annual Nebraska Water

Conference, Red Lion Inn Omaha, NE. Contact: Robert D. Kuzelka, Assistant to the Director, Water Center/Environmental Programs, (402) 472-3305 or Bettina Heinz, IANR Communications Associate, (402) 472-9549.

March 14-16: "Mississippi River and Her People", The Radisson Hotel, Memphis, TN. Contact: Meg Hacker, National Archives-SW Region, (817) 334-5525 ext.244, FAX (817) 334-5621, email: >meg.hacker@ftworth.nara.gov>

March 18-21: "Assessing the Cumulative Impacts of Watershed Development on Aquatic Ecosystems and Water Quality, The Westin Hotel, Chicago, IL.

Contact: Mike Murphy, Northeastern Illinois Planning Commission, 222 S. Riverside Plaza, Suite 1800, Chicago, IL 60606, (312) 454-0400, FAX (312) 454-0411.

March 22-27: 61st North American Wildlife and Natural Resources Conference, Adams Mark Hotel, Tulsa, OK. Contact: Richard McCabe, 1101 14th St., N.W., Suite 801, Washington, D.C. 20005. (202) 371-1808, FAX (202) 408-5059.

March 25-27: Conference on the Ecology and Management of Southern Forested Wetlands, Clemson University, Clemson, SC. Contact: Dr. Kathryn Flynn, School of Forestry, 108 M. White

**Smith Hall, Auburn University,
Auburn, AL 36849-5418, (334)
844-1036, FAX (334) 844-1084
or e-mail: Flynn~Forestry.
Auburn.edu.**

March 27-29: The 15th Annual Meeting of the Western Aquatic Plant Management. Portland, OR. The meeting will feature a symposium on non-indigenous species in western U.S. aquatic ecosystems. Contact: Mark Sytsma, Biology Dept., Portland State University, P.O. Box 751, Portland, OR 97207

March 27-29: 1st International Conference on Restoration Ecology for Sustainable Development, Swiss Federal Institute of Technology, Zurich, Switzerland. Contact: Swiss Federal Institute of Technology Zurich, Geobotany Zurichbergstrasse 38, CH-8044 Zurich, Switzerland; phone +41 1632 12 15, email: lea@umnw.ethz.ch

April 25-26: 28th Annual Meeting of the Mississippi River Research Consortium, Holiday Inn, La Crosse, WI. Contact: Mark Sandheinrich, River Studies Center, Dept. of Biology & Microbiology, University of Wisconsin-La Crosse, La Crosse, WI 54601; (608) 785-8261, FAX (608) 785-6959.

May 16-17: 23rd Annual Conference on Ecosystems Restoration and Creation, Tampa,

Florida. Contact: Frederick J. Webb, Dean of Environmental Programs, Hillsborough Community College, Plant City Campus, 1206 N. Park Rd., Plant City, FL 33566; (813) 757-2104.

May 18-23: 6th International Symposium on Society and Resource Management, Pennsylvania State University, University Park, PA. Contact: A.E. Luloff, program cochair, Dept. of Agricultural Economics and Rural Sociology, 111 Armsby Bldg., The Pennsylvania State University, University Park, PA 16802; (814) 863-8643, FAX (814) 865-3746.

June 9-14: From Small Streams to Big Rivers - 17th Annual Meeting of the Society of Wetland Scientists, Kansas City, MO. Contact: Thomas Taylor, 6617 W. 101st St., Overland Park, KS 66212 (913) 551-7226, email: TAYLOR.THOMAS@EPAMAIL.EP.A.GOV.

June 10-14: 20th Annual National Conference, Association of State Floodplain Managers, San Diego, CA. Contact: Diane Alicia Watson, ASFPM Executive Office, 4233 W. Beltline Hwy., Madison, WI 53711, (608) 274-0123, FAX (608) 249-4484.

June 11-14: Symposium on Social, Economic and Management Aspects of Recreational Fisheries, Dublin, Ireland. Contact: Dr Phil Hickley,

National Rivers Authority, 550 Streetsbrook Road, Solibull B91 1QT, United Kingdom, Tel: 0121 711 5813 or FAX 0121 711 5824.

June 17-23: Society for Ecological Restoration 1996 Annual Conference, Rutgers University, New Brunswick, NJ. Contact: Society for Ecological Restoration, 1207 Seminole Highway, Madison, WI 53711, (608) 262-9547, FAX (608) 265-8557, e-mail ser@vms2.macc.wisc.edu

August 13-16, 1996: The DELTA: Connecting Points of View for Sustainable Natural Resources. Cook Convention Center, Memphis, TN. Contact: National Association of Conservation Districts, Delta Conference, 509 Capitol Court, NE, Washington, DC 20002, (202) 547-NACD.

September 22-28: INTECOL V International Wetlands Conference, University of Western Australia, Perth. Contact: UWA Extension Conference and Seminar Management, University of Western Australia, Nedlands, Perth 6907; 619 380-2433; FAX 619 380-1066; e-mail: uwext~uniwa.uwa.edu.au

October 23-26: 23rd Annual Natural Areas Conference and 15th North American Prairie Conference, Pheasant Run Resort and Conference Center, St. Charles, IL. Contact Karl Becker, (217) 785-8774.

Congressional Action Pertinent to the Mississippi River Basin

Agriculture

S. 854 (Lugar, R/IN) includes recommendations for the Conservation Reserve Program, Wetlands Reserve Program, Conservation Incentive and Cost Share programs. The Farm Bill would no longer allow permanent easements under the Wetlands

Reserve Program, favoring shorter term easements instead. The Conservation Reserve Program would be capped at the current level of 36.4 million acres. The bill would combine all other conservation programs into a new program, the Environmental Quality Incentives Program, focused on problems of livestock

waste management. Approved by the Agriculture Committee on September 28.

S. 935 (Sarbanes, D/MD) amends the Food Security Act of 1985 to establish a program to promote development of riparian forest buffers in conservation priority areas.

H.R. 67 (Bereuter, R/NE) extends the Conservation Reserve Program for 10 years and the Wetlands Reserve Program for 5 years.

H.R. 2284 (Pombo, R/CA) provides incentives for the owners and operators of agricultural land to provide habitat for protected species.

H.R. 2793 (Rose D/NC) provides for establishment and funding of a conservation incentives program to assist farmers and ranchers develop and implement conservation practices to protect soil, water and related resources.

Fish & Wildlife

S. 191 (Hutchison, R/TX) and H.R. 490 (Smith, R/TX) amends the Endangered Species Act imposing a moratorium on new listings and critical habitat designations.

S. 455 (Kempthome, R/ID) clarifies consultation procedures under the Endangered Species Act on management of federal lands.

S. 503 (Hutchison, R/TX) freezes Endangered Species Act listings and critical habitat designations.

S. 851 (Johnston, D/LA) amends the Clean Water Act reforming the wetlands regulatory program. Hearings held July 19 and Aug. 2.

S.1152 (Conrad Burns R/MT) amends the Endangered Species Act with common sense amendments to strengthen the act; enhance wildlife conservation and management; augment funding; and protect fishing, hunting, and trapping.

S. 1364 (Kempthome R/ID) reauthorizes and amends the Endangered Species Act and for other purposes.

S. 1365 (Kempthome R/ID) provides federal tax incentives to owners of environmentally sensitive lands to enter into

conservation easements for the protection of endangered species habitat, and for other purposes.

S. 1366 (Kempthome R/ID) amends the IRS Code of 1986 to allow for deduction from the gross estate of a decedent an amount equal to the value of real property subject to an endangered species conservation agreement.

H.R. 1714 (Dooley D/CA) amends the Endangered Species Act to require expeditious review of species being considered for listing under the act or currently listed under the act.

H.R. 2160 (James Saxton (R/NJ) entitled "Cooperative Fisheries Management Act of 1995." Reauthorizes the Interjurisdictional Fisheries Act.

H.R. 2217 (Pete Geren D/TX) entitled the "Common Sense Amendments for An Endangered Species Act."

Senate Environment Committee on August 3 held a hearing on legislation reauthorizing the Endangered Species Act.

H.R. 2275 (Young, R/AK and Pombo, R/CA) reauthorizes and amends the Endangered Species Act. Marked up on October 12.

H.R. 2284 (Pombo, R/CA) provides incentives for the owners and operators of agricultural land to provide habitat for protected species.

Forests

S. 647 (Lott, R/MS) amends the Forest and Rangeland Renewable Resources Planning Act of 1974 to require that major changes to forest management plans be phased in over time to minimize impact to communities.

H.R 1089 (Cremeans, R/OH) ensures that acquisition of lands for inclusion in the National Forest System does not result in a loss

of tax revenue to the affected county.

H.R. 1439 (Metcalf, R/WA) amends the National Forest Management Act of 1976 to require that the Forest Service timber sale program be financed only by receipts from the sale of timber under the program. Senate Energy Committee held a hearing Nov. 29 on implementation of salvage logging. House Resources Committee held hearing on Dec. 19 on salvage logging and timber health issues.

Government Affairs

S. 169 (Grassley, R/IA) curbs the practice of imposing unfunded federal mandates on states and local governments.

S. 1001 (Glenn, D/OH) reforms the regulatory process, providing for cost-benefit analysis risk assessment of major rules, and calls for a review of existing rules.

S. 1346, (Abraham R/MI) requires periodic review of federal regulations.

H.R. 2500, (Michael Oxley R/OH) amends the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

H.R. 2827 (Saxton R/NJ) consolidates and improves governmental environmental research by organizing a National Institute for the Environment.

Grazing

S. 193 (Campbell, D/CO) establishes a forage fee formula on Agriculture and Interior department lands.

S. 629 (Thomas, R/WY) prohibits requiring environmental assessments for grazing permit renewal under the National Environmental Policy Act.

S. 636 (Daschle, D/SD) requires the Agriculture Secretary to issue new term grazing permits on National Forest System lands to replace expired or expiring grazing permits.

S. 852 (Domenici, R/NM) and H.R. 1713 (Cooley, R/OR) provides for the uniform management of livestock grazing on federal lands. Senate Energy Committee approved for floor action on November 30.

H.R. 1713 (the Livestock Grazing Act) was approved by the House Resources Committee full committee action on September 12.

H.R. 1375 (Cooley, R/OR) provides for extension of expiring term grazing permits for lands within the National Forest System.

Mining

S. 504 (Bumpers, D/AR) amends the Mining Law of 1872, imposing a royalty on mineral operations and reforming the process for mineral development.

S. 506 (Craig, R/ID) amends the Mining Law of 1872 imposing a royalty on mineral operations and reforming the process for mineral development.

S. 639 (Campbell, R/CO) amends and reforms the Mining Law of 1872 providing for the disposition of locatable minerals on federal lands.

Parks

S. 964 (Johnston, D/LA) amends the Land and Water Conservation Fund Act of 1965 giving the Interior Secretary authority to collect entrance fees at National Parks for direct use on priority park maintenance and repair projects.

H.R. 260 (Hefley, R/CO) provides for a plan and management

review of the National Park System, and reforms the process for considering additions to the system.

H.R. 1280 (Hefley, R/CO) establishes guidelines for determination of National Heritage Areas.

H.R. 1301 (Vento, D/MN) establishes the National Heritage Area Partnership Program.

H.R. 1449 (Roberts, R/KS) provides for establishment of the Tallgrass Prairie National Preserve in Kansas.

H.R. 1846 (Richardson, D/NM) establishes the Yellowstone Headwaters National Recreation Area within Montana's Gallatin and Custer National Forests

Public Lands

S. 93 (Hatfield, R/OR) amends the Federal Land Policy and Management Act providing for ecosystem management on public lands. Referred January 4 to Committee on Energy and Natural Resources.

S. 449 (Simon, D/IL) establishes the Midewin National Tallgrass Prairie in Illinois.

S. 518 (Thomas, R/WY) limits federal acquisitions in states where 25% or more of the land is owned by the United States.

Senate Energy Committee approved for floor action **S. 907**, clarifying the authorities and duties of the Agriculture Secretary in issuing ski area permits on National Forest System lands and to withdraw lands within ski permit boundaries from the operation of the mining and mineral leasing laws.

S. 1031 (Thomas, R/WY) and H.R. 2032 (Hansen, R/UT) transfers lands administered by the Bureau of Land Management to the states. House Resources

Committee held a hearing August 1 on **H.R. 2032**

S. 1151 (Burns, R/MT) establishes a National Land and Resources Management Commission to review and make recommendations for reforming the management of public lands

H.R. 2107 (Hansen, R/UT) amends the Land and Water Conservation Fund Act of 1965 to improve the quality of visitor services provided by federal land management agencies through an incentive based recreation fee program

Recreation

H.R. 104 (Emerson, R/MO) rescinds fees required for use of public recreation areas at lakes and reservoirs under jurisdiction of the Army Corps of Engineers.

Refuges

H.R. 91 (Sensenbrenner, R/WI) prohibits land or water acquisition for the National Wildlife Refuge System if wildlife refuge revenue sharing payments have not been made for the preceding year.

S. 1013 (Conrad, D/ND) authorizes the Interior Secretary to acquire land for the purpose of exchange for privately held land for use as wildlife and wetland protection areas.

H.R. 1112 (Brewster, R/OK) and S. 976 (Nickles, R/OK) transfers the Tishomingo National Wildlife Refuge to the state of Oklahoma.

H.R. 1675 (Young, R/AK) improves management and establishes purposes of the National Wildlife Refuge System.

H.R. 2679 (Barrett, R/NB) revises the boundaries of the North Platte National Wildlife Refuge

Rivers

H.R. 1260 (Johnson, D/SD)

ensures equity in and increased recreation and economic benefits from the Missouri River system.

H.R. 1331 (Furse, R/OR) creates a voluntary non-regulatory technical assistance and grants program within the Natural Resource Conservation Service's existing Small Watershed Program.

H.R. 2939 (Gunderson, R/WI) provides for a Congressionally authorized test of the Mississippi Interstate Cooperative Resource Agreement in the Mississippi River Basin.

Takings

S. 135 (Hatch, R/UT) establishes a uniform federal process for protecting private property rights.

S. 145 (Gramm, R/TX) provides for protection of private property rights.

S. 605 establishes a uniform system for protecting property rights and compensating landowners adversely affected by regulations. Approved for floor action on Dec. 21.

H.R. 9 (Archer, R/TX) creates jobs, enhances wages, strengthens private property rights

and reduces the power of the federal government.

H.R. 971 (Wyden, D/OR) ensures that homeowners have access to information and opportunities to comment on actions that may decrease home values, and establishes a compensation program for development that produces pollution or otherwise impacts home values.

Water and Wetlands

S. 49 (Stevens, R/AK) amends the Clean Water Act providing for exemptions to wetlands regulations and protection of property rights in Alaska.

S. 626 (Hatfield, R/OR) amends the Watershed Protection and Flood Prevention Act establishing a technical assistance and grant program for waterways restoration.

S. 639 (Warner, R/VA) authorizes civil works programs for the Army Corps of Engineers which preserves the navigation of channels and harbors and provides for flood control and storm damage reduction.

H.R. 198 (Smith, R/MI) amends the Food Security Act of 1985

permitting conversion of wetlands smaller than one acre in size.

H.R. 226 (Dingell, D/MI) amends the Safe Drinking Water Act assuring the safety of public water systems.

H.R. 961 (Shuster, R/PA) reforms and reauthorizes the Clean Water Act. Passed the House May 16, 1995.

H.R. 1132 (Oberstar, D/MN) amends the Clean Water Act providing for improved non-point source pollution control.

H.R. 1262 (Pallone, D/NJ) amends the Clean Water Act improving enforcement and compliance programs.

H.R. 1268 (English, R/PA) establishes a comprehensive program for conserving and managing wetlands.

H.R. 1438 (Lowey, D/NY) amends the Clean Water Act to provide funding to the states for estuary conservation.

Source: Land Letter, Vol. 14, Nos. 17, 20, 24, 33 and Vol. 15, No. 2; and NOAA Legislative Informer, September 1995, Issue #15

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River Crossings

Volume 5

March/April 1996

Number 2

Hearing Scheduled on MICRA Bill

Congressman Steve Gunderson (R/WI) has announced that a hearing has been scheduled on May 9th by the House Resource Committee on the "Mississippi Interstate Cooperative Resource Agreement Act of 1996" (H.R. 2939).



The Hearing is a major step forward in moving the bill to the

House floor. No funding is provided by the bill, so it is seen as non-partisan. The bill authorizes the Secretary of the Interior to use available funds to assist MICRA in carrying out a three year evaluation of its programs.

Persons interested in additional information about the bill should contact the MICRA office or Ms. Dana Wolfe, Representative Gunderson's Legislative Director at (202) 225-5506 in Washington, D.C.

States Bail Out of Flood Plan

Midwest state and federal agencies poised for widespread floodplain reclamation have bailed out of a precedent setting agreement. Seven Midwestern states (IA, IL, MO, KS, MN, NE and WI) had signed what amounted to a mini-treaty, a non-binding memo of agreement that flood protection would be maintained at then-existing levels,

but with no state taking undue advantage of another by raising dikes and levees at the expense of its neighbors.

The states had essentially agreed to restrict their flood-fighting efforts to the protection of vital public facilities, transportation corridors and human populations. Monies were to be available to encourage flood-prone landowners to sign permanent easements that would allow the Mississippi and Missouri rivers to spill into historic

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backwaters, thereby relieving some threats to cities and vital developments along river banks.

Conservation officials called it a "golden opportunity" to win back a healthier river system. Of secondary importance was to be the buying back of property that unwisely had been located in a floodplain, including buildings and crops. The states wanted to avoid resumption of traditional "levee wars" where one district after another strives to constrict and narrow the river to the detriment of those living on the other side or downstream. This was to be a new and enlightened era of river conservation, with the highest and broadest values leading toward a healthy and less-damaging river system.

However, something apparently was wrong with the agreement's language because landowners, Corps of Engineers officials, and various state officials interpreted it differently. The Illinois Department of Natural Resources (DNR), inundated with fears from river-based groups and citizens that flood-fighting efforts might be stymied by any of these restrictions, was the first to "bail out". Missouri quickly followed suit, and Iowa officials said they may be forced to do the same.

"We were left with no choice," said Ron Kucera of the Missouri DNR. "If Illinois was not going to uphold its end of the bargain on its side of the river, we could not very well do it on our side, leaving our own people without protection." Illinois' reversal came under pressure from river-based politicians and levee districts that feared the agreement tied the hands of property owners, and a smear campaign arose up and down the river.

"People felt they were going to be abandoned by the department in times of emergency," said Carol Knowles, the Illinois DNR's

spokesperson. "The language clearly led people to believe they would not be able to sandbag to protect their property. The DNR decided to cut its public relations losses and abandon even a non-binding, non-enforceable objective. According to Knowles, Illinois already has laws on the books that dictate requirements that levee districts must meet -- "Nothing has changed".

Nothing has changed indeed! When the next flood comes along floodplain dwellers will again expect taxpayers to bail them out of their losses. One thing is certain -- when you live on a floodplain, there will be a next time -- it's just matter of when not if! The 1993 flood cost taxpayer's between \$14 and \$16 billion to compensate floodplain dwellers for their losses. Some of

these same property owners were then again bailed out two years later after the 1995 flood. One has to ask one's self if this kind of continued investment in private floodplain property is in the best public interest.

Of course, the complaints and fears regarding the seven state agreement were voiced by the people living on the floodplain -- those faced with losing their taxpayer subsidy and having to go it alone after the next flood if the agreement held. Most of the rest of us didn't even know the debate was going on!

One such group who receives huge subsidies is the levee and drainage districts: "We're very pleased (with the withdrawal), but we're not very surprised," said John Robb, chair of the Upper

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

Mississippi Flood Control Association. Levee district officials, he said, thought IL Governor Jim Edgar would oppose the plan once he heard their concerns.

This action clears the air, Illinois Lt. Governor Bob Kustra said, "In times of crisis, Illinoisans deserve assurances that the state will do all it can to protect private property - just as we did so valiantly during the Great Flood of '93.". "The agreement called that level of assurance into question."

"We're hopeful we can enter into negotiations with the state on navigable rivers," Mr. Robb said. Levee districts and the state should work together to manage "the Midwest's coastline," he said.

Jack Riessen, Iowa's floodplain management expert, said Illinois may be asked to redraw a more palatable version of the agreement -- "even though I'm not sure it will make any difference." Riessen conceded that many misinterpretations have arisen. "This agreement was not meant as a great show of force," he said. "It was more to preserve the existing level of protection, so that one side of the river wouldn't do something that would harm the other."

So the beat seems to go on -- did we learn anything from the 1993 flood? One could argue that we did in that we have seen buyouts of some flood prone property, and some lands have been placed in greenspace and floodways to provide for flood conveyance and storage space. However, for the most part, based on the failure of this non-binding agreement to hold, and the fact that vast reaches of river have been relieved at public expense, it would seem that most people have forgotten about the flood, and "humpty dumpty" will once again be perched on his levee waiting for the river to knock him

off when the next flood comes along. What will it cost us next time?

Sources: Chicago Tribune by line article by John Husar (2/29/96) and Rock Island Argus by line article by Katie Schallert (2/22/96).

Missouri Seeks to Regulate Flood Plains

Farmers who want to build higher levees along Missouri's big rivers are opposing an attempt to impose minimal state regulations on construction in flood-prone areas. A bill in Missouri's House creating an office of floodplain management in the State Emergency Management Agency (SEMA) is the first step in complying with new federal disaster laws.

"This is a new direction," Rep. Gary Wiggins, (D/New Cambria), said. "It is imperative that the state of Missouri start managing its flood plains." But Paul LePage of Jefferson City, president of the Association of Levee and Drainage Districts, said flood plains are already regulated by several agencies, including the U.S. Army Corps of Engineers. "Anything to be done on the flood plain or along the river should be done by the Corps," LePage said.

The Corps pays 80% of the cost of repairing levees damaged in floods. LePage said the coffers of

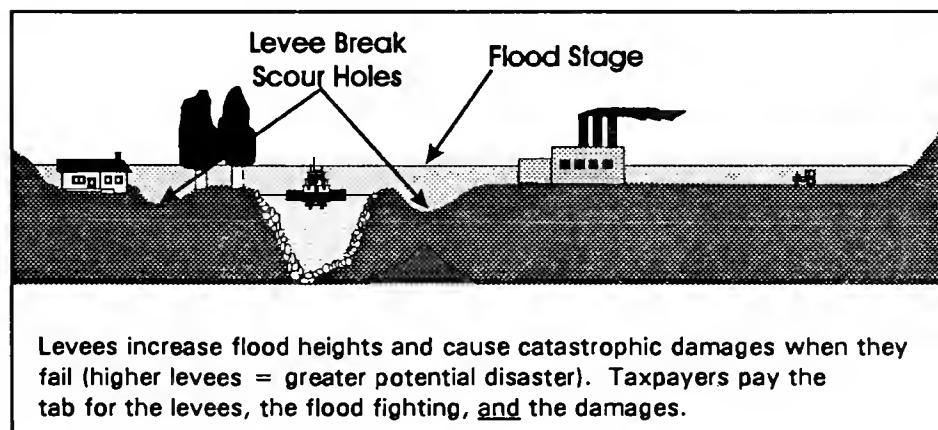
levee districts are depleted after paying their share for repairs after the 1993 and 1995 floods, "but if we could raise the money to raise levees on the" upstream ends, "they should be built higher than the river ever was."

No MO state agency now watches over local implementation of federal flood laws. Unless Wiggins' bill passes, SEMA director Jerry Uhlmann said, Missouri could be penalized by reduced federal aid during future floods. "We are the only state in the Midwest with nothing in legislation as far as floodplain management," Uhlmann said. "The rules have changed, and I think we need to address these issues."

Wiggins' bill would take the following steps to assert state power over flood control:

- Bar the use of state money to construct public buildings in flood-prone areas;
- Require real estate appraisers and salespeople to disclose whether a building is in an area likely to flood;
- Create a statewide mapping system to identify levees and how high water must rise before water washes over;
- Require that levee districts get state approval before constructing or modifying a levee.

Still, Uhlmann said, levee districts will be free to add to their levees so that most small floods would not be a threat. "We're not



taking such a bold stand that we are going to redo floodplain management."

Source: Columbia Daily Tribune
2/7/96

Willamette River Restoration

The Willamette River in Oregon was once a complicated braid of side channels, wetlands and sloughs that flooded regularly, spilling nutrient-rich silt on the valley floor. The side channels and wetlands provided valuable habitat for salmon, ducks and other fish and wildlife.

River Network would like to buy land back from willing sellers to restore some of these historic wetlands that diffused and absorbed Willamette Valley floodwaters. The mainstem channel between Eugene and Albany once included about 190 miles of waterway. As side channels and wetlands were diked and drained for farmland and urban development, the waterway was reduced to 100 miles. About 40% of the Willamette Valley's wetlands have been lost.

"We've got to give the river back to itself to some extent, give it room to roam," Phil Wallin, Director of River Network said. "We've got to bring back the wetlands and the woodlands to smooth out the peak of the flood when it does come."

According to a recent River Network study, if 50,000 acres of wetlands were restored throughout the Basin, it could slow the peak of a major flood by as much as six hours and reduce the river's flow by 18%.

Wetlands restoration wouldn't stop a major flood, but it would prevent smaller ones and take some of the punch out of the big ones, the study said. The study was done by Portland engineer Kevin Coulton and Philip Williams Associates, a San Francisco consulting firm. It took two years to complete and was based on U.S. Army, Corps of Engineers' data.

Applied to the Flood of 1996, wetlands restoration could have reduced flood crests by 1.9 ft. The Corps of Engineers estimates that every foot taken off a flood in an urban area reduces damages by \$50 million.

Restoring wetlands is cheaper as well as less damaging to the environment than dams. In the 1960's, the Corps of Engineers bought \$8 million worth of wetlands conservation easements along the Charles River in Massachusetts and achieved the same amount of flood protection as building a \$100 million dam.

Some farmers in the Willamette River Valley are interested in River Network's proposal, however, others are very skeptical. "By and large there's been an adversarial

feeling, but I think there's been a swing on both sides", said Larry Lyons, a local farmer.

River Network bought several thousand acres from farmers along the Missouri River in the Midwest after flooding in 1993 and sold it to the government for a wildlife refuge. Wallin figures it could take 10 years to achieve the wetlands restoration he envisions in the Willamette Valley through a combination of private fund raising and government financing. "There is land that...was taken from the river. Maybe the best and highest use is to let it go back to the river", Wallin said. "But you don't want to use a bulldozer...to force a situation. You want to use a handshake."

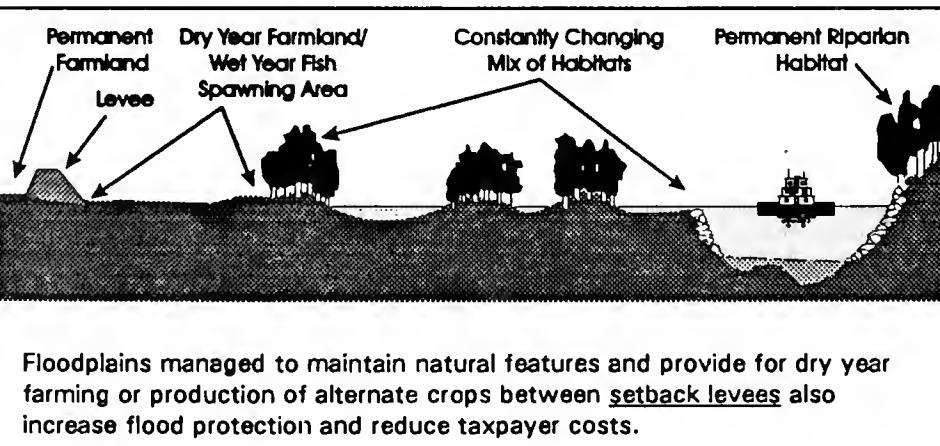
Source: Columbian, Vancouver, WA, 3/14/96.

Floods May Help Salmon

"The floods of '96, destructive as they were, may turn out to be one of the best things that has happened for wild salmon and steelhead in a long time," reports the *Portland Oregonian*. The Northwest's floods may bring "short-term disaster" as salmon-spawning streams, especially those near heavily logged areas, were alternatively scoured by rushing water and uprooted vegetation and "smothered" by mudslides.

But the floods may result in long-term benefits of healthier watersheds, says Doug DeHart, Oregon's fisheries chief. Deposits of wood, rock and mud will eventually make streams more complex by creating a variety of habitat in which fish can spawn and mature. "But that will be true only if people resist the temptation to clean up all of the mess."

Oregon Governor John Kitzhaber (D) urged citizens to check with



the state before cleaning up streams: "As we clean up ... I'd like for everyone to be aware of a tremendous opportunity to actually help our fisheries and make a difference to the future of our salmon".

Source: Greenwire Vol. 5, No. 196

Grand Canyon Flooding

On April 23 Interior Secretary Bruce Babbitt opened up the gates at the Colorado River's Glen Canyon Dam in an attempt to try to recreate the spring flood that used to sweep through the Grand Canyon each year. It was the first time the government has ever opened the floodgates of one of its dams to repair some of the damage done to river canyons that have been denied their natural flow for many years.

The week-long flood, "nearly 15 years and \$60 million in the planning," will send more than 117 billion gallons of water through the canyon, raising the river by 12 ft. in places.

Scientists hope the flood will rebuild beaches and restore "slack backwaters that are the biological heart of the canyon."

Babbitt said the flood represents "a new beginning in river management. We are at last coming to grips with the American landscape." Dave Wegner of the Bureau of Reclamation said the flood is "a major test of whether man can do something right with dams rather than always doing something wrong with dams".

Some 200 researchers were scattered along 290 miles of the river to see how well sand and nutrients -- needed to nourish plant and animal life -- move to replenish the Grand Canyon's eroded beaches and sandbars. The dam reduced annual sediment flow to 10% of the 65 million tons that used to move

downstream. With fewer floods, backwaters became cold and stagnant, destroying spawning areas of native fish.

The \$4.5 million flood, which could be repeated every decade, "is designed to agitate the sediment" at the river's bottom and help endangered fish like the humpback chub recover. But some fear that the floods could undermine some of what they perceive to be positive changes that have taken place over the last 30 years. Non-native tamarisk trees now line the river's banks, providing habitat for the endangered southwestern willow flycatcher, which in turn draw peregrine falcons that may eventually move off the endangered species list. Within three months, scientists will know whether the birds have found new places to settle along the river. A final study on the flood's effects is due in December.



Some doubt the flood will be big enough to rebuild beaches and habitat. At 45,000 cubic feet per second (cfs) the flood "would hardly have raised eyebrows" before the dam was erected in 1963. The river's normal spring flow then was about 120,000 cfs, while floods reached 300,000 cfs. "This is a pretty wimpy flood," Utah State University's Jack Schmidt said. "Other wildlife biologists worried that a bigger flood would wash away too many vulnerable species.

The "biggest critics" of the experiment are river guides who fear that Glen Canyon's renowned non-native trout fishery is "being sacrificed". Nine tribes are also worried that rising water could

damage 470 cultural and religious sites along the river".

Source: Greenwire Vol. 5, No. 221

Wetlands Hold Promise for Raising Endangered Fish

Biologists involved in the recovery of endangered Colorado River fish collected twenty-eight 4 to 5 month old endangered razorback suckers in a Utah wetland last fall -- more than researchers have found in any previous study. The scientists presented their findings at an annual "Upper Colorado River Basin Researchers Meeting," held near Page, AZ, in January.

Although old adult razorbacks exist in the Green River, the discovery of these young fish in a wetland on the Ouray National Wildlife Refuge has proved that razorbacks can survive beyond the critical stage in the wild. "Most fish die during the first few months of life," said U.S. Fish and Wildlife Service biologist Tim Modde. "If they get past that stage, they have a much better probability of survival."

The last time biologists found wild razorbacks of that age was in 1965, when eight were collected after Flaming Gorge Dam had been completed. Construction of dams and subsequent introductions of non-native species are the primary reasons these fish now are endangered. "This new finding doesn't mean recovery is at hand, but it has taken a major step forward," Modde said. It also demonstrates the need to make similar wetlands available to other young endangered fish, he explained.

Today an estimated 500 adult razorbacks live in the river basin. Native to the Green, Colorado, Gunnison, Yampa and White rivers, razorback suckers began to disappear once Flaming Gorge and other dams were built. Along the

Green River, construction of the Flaming Gorge Dam harnessed the river's seasonal flows. Spring and early summer wetlands that once served as the razorback's rearing and feeding grounds vanished. In addition, introductions of non-native fish such as carp, northern pike, fathead minnows and red shiners increased the number of razorback predators.

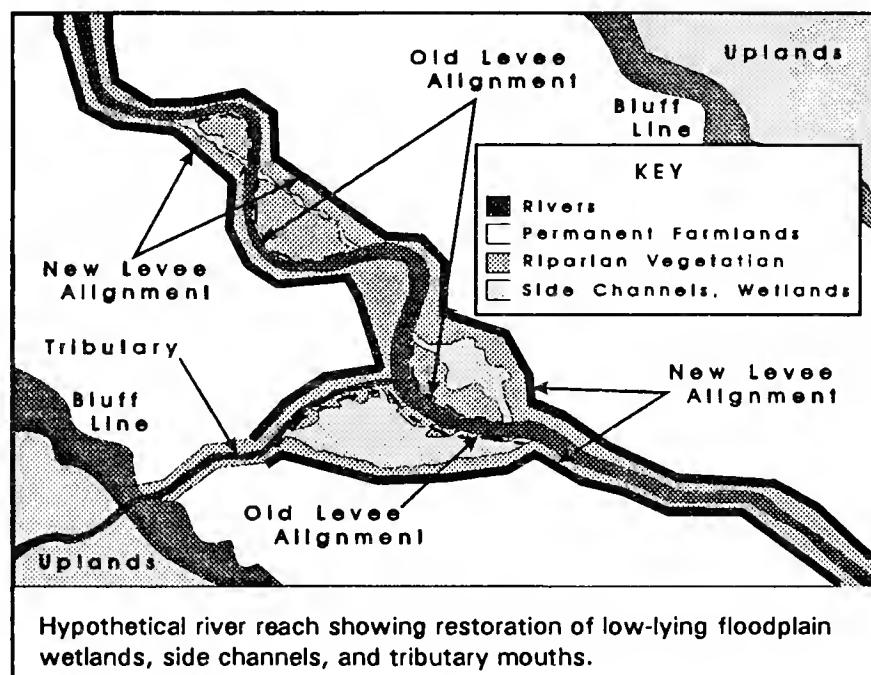
Biologists with the Recovery Program are trying to improve endangered fish habitat by allowing the basin's rivers to flood by increasing flows from the dams and by creating openings in downstream dikes,

levees and diversions to re-establish the seasonal wetlands that once enabled razorbacks to flourish. "We're fairly optimistic that we'll be able to restore a sufficient amount of habitat to recover the species," said Pat Nelson, who coordinates the flood plain restoration work for the Recovery Program.

This approach also could inadvertently improve conditions for many other wildlife species. John Hamill, who directs the multi-agency Recovery Program agrees, "These areas are rich and productive, and to the extent that we can restore them for endangered fish, many other species will benefit." While the river basin encompasses 871 river miles, Recovery Program officials are not trying to reclaim all natural wetlands that once existed. A survey of the Green and Colorado river drainages identified 135 sites in the Green River drainage and 158 throughout the Colorado River drainage that possibly could

provide good habitat.

Similar floodplain wetland restorations would likely benefit many of the Mississippi River Basin's large floodplain rivers. Many of our endangered floodplain fishes adapted to periodic floodplain inundations by developing or evolving reproductive strategies that took advantage of seasonal and ephemeral wetlands that were created and destroyed by seasonal and periodic flood events. By locking our rivers into a "straight jacket" of levees and revetments, we have destroyed



most of the off-channel habitats and eliminated the reproductive strategy of many of our native floodplain river fishes.

Acquisition of low lying areas as part of an overall flood protection strategy would create space for conveyance and storage of flood waters, as well as allow for development of the floodplain wetlands needed by many of our threatened and endangered fishes.

Contact: Connie Young, (303) 236-2985, ext. 227

Colorado River Floodplain Habitat Restoration Program

The Colorado River Floodplain Habitat Restoration Program is an adaptive management program with adjustments made annually based on previous results. Program participants present preliminary results each November, with Work Group members given the opportunity to provide input and recommendations regarding the following year's Program scope and direction.

The Program's goal is "to restore or enhance natural floodplain functions that support recovery of endangered fishes in the upper Colorado River basin." The Program is focusing initially on razorback suckers, based on the assumption that razorbacks require floodplain habitats to complete their life cycle. Bonytail and Colorado squawfish will be addressed after positive responses in razorback populations have been achieved.

Based on the assumption of inadequate recruitment, the Program will restore habitat function for larvae and juveniles, but habitat restoration is expected also to benefit razorback adults and spawning.

The Green River is highest priority, where the last riverine population of razorbacks exist. As floodplain habitats are restored along the Green River, monitoring will follow, to evaluate results. While monitoring/evaluation is conducted along the Green, restoration efforts will be directed toward the Colorado and

Gunnison Rivers, to prepare those areas for razorback reintroductions.

The most floodable sites will be targeted. Although there are numerous terraces that are relatively floodable, ways to enhance floodability of these sites are limited. Floodability of depressions, however, can be easily enhanced by breaching a portion of the (natural or man-made) levee. Therefore, the Program will target restoration of floodplain depressions.

In each case the following items are addressed:

- Land Ownership - For each candidate restoration site, the landowner (Federal, Tribal, State, or private) is contacted for permission to restore the habitat.
- Contaminants Screening - Each candidate restoration site is screened for contaminants. Federal mandates require that contaminants surveys be conducted on properties in which the government wishes to acquire an interest. Also, the Program does not wish to restore habitats that cannot sustain endangered fishes.
- Floodability Assessments - Candidate restoration sites that can be made to fall within the 1, 2, 5, and 10-year floodplain (via excavation or levee removal) will be higher priority than less floodable sites.
- Environmental Compliance - 404 Permits, Section 7, EA, Utah Stream Alteration Permits, cultural archeological resources clearances, NEPA Categorical Exclusion Checklists, MOW's, etc., are necessary prior to site restoration.

Once pre-restoration activities have been completed, excavation and/or construction to reconnect floodplain habitat to the main channel gets underway. After sites have been restored, evaluation of results provide information to complete the feedback loop for adaptive

management:

- Site-specific evaluations look at a small area (i.e., the site and its immediate surroundings) to see if it is being used by endangered fishes;
- Reach-specific evaluations look at effects of restoration on a section of river that includes several sites (e.g., Levee Removal Strategy evaluation);
- Basin-wide evaluation monitors and evaluates effects of restoration activities on status/trends in species abundance and ecosystem parameters.

Sites will continue to be restored until:

- It is demonstrated that endangered fish populations are responding positively, and that self-sustaining populations are achievable; or
- It becomes obvious that endangered species are not responding positively, likely because of nonnative fishes.

In the case of the Green River, restoration of 10 to 20 sites (1996-1997) between Dinosaur National Monument and Sand Wash may be adequate to elicit a population response. In the Gunnison and Colorado Rivers, an initial 5 to 10 sites will be restored, in conjunction with razorback reintroductions (1997-1998). Easements will be needed for privately-owned sites.

Contact: Connie Young (303) 236-2985, ext. 227

Logging Practices and Flooding

"The effects of past logging practices on mountain streams are far more extensive and enduring than previously believed, federal researchers have declared in a study that reviews" some four decades of data from Oregon's Willamette National Forest.

Gordon Grant, a U.S. Forest Service (USFS) hydrologist, and

Julia Jones of Oregon State University determined that clearcutting and road-building increased peak flows in streams by 20-50%, "a finding that establishes a long-disputed link between logging and swollen streams." The effects diminished but were still apparent 25 years after clearcutting, according to the study, which will be published in the April issue of American Geophysical Union's Water Resources Research. "We are noting there are long-term legacies from past practices that continue into the future," Grant said.

"Perhaps the most significant finding of the research is the apparent synergy between logging roads and clearcutting": The roads "rapidly inject flows of rain and snowmelt running off clear-cuts into streams." Because of insufficient past records, the study doesn't speak to major events like the floods of February 1996.

If the study -- which comes out of "two of the nation's most prestigious centers of forestry research" -- is widely accepted, it could bolster USFS efforts to obliterate old logging roads and discourage clearcutting. But the timber industry and the Oregon Department of Forestry dispute the findings. Weyerhaeuser's Kate Sullivan said the study's conclusions "far overreach the data that is presented".

Source: Greenwire Vol. 5, No. 209

Allegany Logging Plan Dropped

"In a move that further bolstered his standing with environmental groups," New York Governor George Pataki (R) on February 11th killed a state plan that for the first time would have allowed commercial logging in the 67,000 acre Allegany State Park.

Describing the park as "a unique asset," Pataki outlined a revised plan that would halt all logging until a 10-year study of the park's ecology is completed. Pataki said "This continuous stretch of mature forest is irreplaceable and must be protected."

Enviros had collected 100,000 signatures petitioning against the original plan, and several groups were prepared to take the state to court to stop the logging proposal. Some environmental leaders said the shift in plans was the latest example of a sharp change in course in the Pataki administration's environmental policies.

Richard Brodsky, chairman of the state Assembly's Environmental Conservation Committee, remained wary of Pataki's about-face, saying the announcement did not specify whether the ban on commercial logging included the state's own sale of timber it might extract from the park. And he said Pataki did not mention where he stood on plans to develop oil and mineral resources beneath the park, the rights to which remain in private hands.

Source: Greenwire Vol. 5, No. 190

Clear Cutting in Tennessee

Calling the Tennessee Division of Forestry "a pawn of the paper and pulp industry rather than a good steward of public lands," Jackson, Tennessee-based Citizens for Common Sense on March 21st displayed photographs of clear-cuts and streams muddied by erosion in state forests. The group condemned clear-cutting of state forests, called for selective timber harvests and said the forest division should be moved out of the Department of Agriculture to the Department of Environment and Conservation.

The citizen group also revealed a November 1995 letter from TN Agriculture Commissioner Dan Wheeler to TN Governor Don Sundquist (R) as evidence that the forestry division supports clear-cutting. In the letter, Wheeler wrote: "The state forest system is well-disposed to demonstrate this important management practice even though the technique may be 'aesthetically' displeasing."

After hearing the latest charges, Wheeler denied the pulp industry dictates TN forest management policy and said he felt the Department was "extremely careful in the way we've managed the state forest system".

Source: Greenwire Vol. 5, No. 220

Pennsylvania Wetlands Policy May Cause Flooding

Six weeks after Pennsylvania suffered through its worst flooding in 20 years, the state Department of Environmental Protection (DEP) is set to implement a new wetland policy "that scientists say will increase the likelihood of similar deluges."

Starting on March 4, the state allowed individuals owning land in subdivisions approved prior to 1991 to fill in small (<1/2 acre) wetlands without extensive environmental evaluations or without providing replacements. The agency will also exempt farmland that was converted from wetlands prior to December 1985.

To make up for wetland losses, the DEP has established a fund to create replacement wetlands. The DEP will charge a fee ranging from \$500 to \$7,500 and use it towards a wetland replacement fund. Landowners will not be allowed to fill more than 40% of their individual lots.

Ken Reisinger of DEP's wetlands

division said the rule is not for developers because it only affects individuals building their own house and driveway. Developers stuck with "useless" land will be able to sell off lots to individual owners who are willing to pay the fee and fill wetlands, but Reisinger says "the permit requires them to avoid wetlands when they can".

Peter Kostmayer of PA Citizens' Alliance argued that the new rules would lead to a massive development and net loss of wetlands. Kostmayer a former US EPA regional administrator and other enviros asked DEP to release documents detailing how it arrived at the new policies, since a large amount of public comment opposed the changes. They also asked for copies of analyses of how much wetlands would be lost under the policies. DEP Secretary James Seif said that some documents were readily available, but that the cumulative impact of the new policies was "unknowable at the moment."

Source: Greenwire Vol. 5, No. 183 and 187

Freshwater Ecosystems in Danger

Many of the dams, irrigation and flood-control systems built in the 20th century to regulate freshwater ecosystems will come to be regretted, according to a new study by Janet Abramavitz of the Washington, DC-based Worldwatch Institute.

The study asserts that the billions of dollars spent on such projects have succeeded in increasing the frequency and severity of floods on many rivers like the Rhine and Mississippi. Flood-control projects also tend to gloss over the need to maintain water quantity and quality.

Fisheries located in these freshwater ecosystems are under threat from pollution and water

diversions, creating high extinction rates. Currently, some 20% of the world's known freshwater fish species are extinct or imperiled; in North America and Europe, that figure is closer to 40%. In addition, many vital wetlands areas -- which serve as fisheries and naturally purify water -- have also been converted to other uses, the report said.

"The lessons learned from mistakes" on similar rivers are being ignored by developers of similar projects, such as the Three Gorges Dam in China, the Hidrovia plan in South America and the Mekong River Project in SE Asia, the report said.

Worldwatch recommends that governments admit that many "glamorous" development projects actually reduce economic benefits in the long run. Governments should also take an ecosystem-based approach to managing freshwater areas, and consider the idea of restoring a rivers' natural flows. For example, removing two dams on the Elwha River in WA would cost \$100 million, but would yield \$3 billion to \$6 billion annually from fishing, recreation and other uses.

Source: Greenwire Vol. 5, No. 220

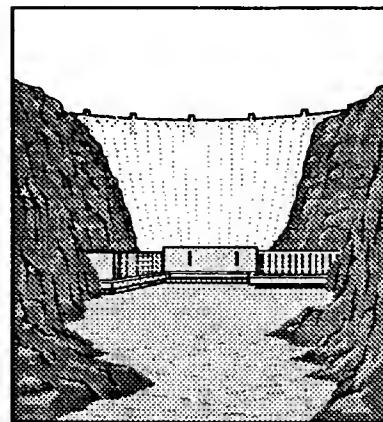
Elwha Dam Removal Faces Fight

"The single most effective step to restore depleted Northwest salmon runs is to tear down two dams" on the Elwha River in Washington state, Interior Secretary Bruce Babbitt said. His remarks were made in a March 20th interview to promote the Clinton Administration's plan to spend \$111 million to remove the dams and restore the river.

"As a realistic matter, we cannot expect Congress to give us \$111 million this year. What we would like is to get a clear statement of

purpose from the Congress against which we can accumulate the money over the next three years", Babbitt said. But the Administration plan, which is included in President Clinton's FY97 budget request, "is likely to have a rough run through Congress". Sen. Slade Gorton (R/WA), who chairs the Senate Appropriations Interior Subcommittee, has indicated he supports a cheaper plan to buy the aging dams and install fish-passage systems.

Gorton said the Administration's idea would not result in broad, regional salmon recovery and would consume more than a fifth of total salmon-recovery funds. Farming, power and transportation



interests view dam removal with "suspicion". But Sen. Patty Murray (D/WA), who backs the Administration plan, "said the government will be faced with millions of dollars more in litigation costs from Native American tribes if it doesn't act now" to restore the Elwha.

Greenwire Vol. 5, No. 218

Destroy Dam or Build Ladders

The PacifiCorp utility must either spend \$26 million to equip its hydroelectric Condit Dam on Washington's White Salmon River with fish ladders or demolish it to make salmon passage feasible,

the Federal Energy Regulatory Commission (FERC) said. FERC's ruling came in a draft environmental impact statement prepared as part of PacifiCorp's application to relicense the dam, which is among the first dams in the Northwest to go through that process.

FERC agreed with enviros that dam removal "holds the most promise" for restoring salmon and steelhead in the river, which has been as designated wild and scenic. FERC stopped short of ordering the dam removed, however, saying it would be too expensive, and instead offered the fish ladder as an alternative.

PacifiCorp's Terry Flores questioned the proposal, saying the ladders would cost "at least" \$30 million and would make the dam unprofitable. Company officials plan to ask FERC to consider alternatives, such as trucking the fish around the dam. But Katherine Ransel, a lawyer for American Rivers in Seattle, disagreed with the FERC that high cost and silt buildup preclude removal of the dam, saying the demolition would cost \$10 million. "If we can't do it here, where can we do it?", Ransel said.

Source: Greenwire Vol. 5, No. 188

Platte River Pact Reached

Nebraska Governor Ben Nelson (D) on March 15th announced a tentative compromise on setting aside Platte River flows for fish and wildlife habitat. Nelson called the deal a "win-win" solution that would avoid a costly legal battle while retaining adequate flows for wildlife. The pact stems from a 1993 request by the state Game and Parks Commission for reserving unappropriated flows from the Platte that angered irrigators and utilities.

The pact, reached by negotiators

from the Parks Commission and 31 irrigator groups and utilities, calls for about a 40% reduction in the flows requested by the Parks Commission, but grants assurances that alternatives in protecting river and wet meadow habitat will be pursued. The pact also puts off, for at least three years, requests for flows to maintain wet meadows near the river.

Enviros, however, have "panned" the proposal. At a recent National Audubon Society's conference, NE Audubon Society's Dave Sands urged participants to write to the Parks Commission opposing the compromise. John Cavanaugh of the Platte River Whooping Crane Habitat Trust said the pact ignored evidence about the needs of fish and wildlife and was reached without enough input from enviros and Commission staff. Nelson acknowledged that wildlife groups might feel slighted, but said they were involved in initial negotiations.

Source: Greenwire Vol. 5, No. 217

Missouri Sues the Corps

The State of Missouri and a non-profit trade association, MO-ARK, filed suit on March 12th in federal district court in Kansas City to overturn the Corps of Engineers' (COE) 1996 Annual Operating Plan for the Missouri River reservoirs.

The plaintiffs oppose a provision in the plan that would shorten the navigation season by two weeks if the amount of water stored in the main stem reservoirs on July 1 dropped to 52 million acre feet (MAF) rather than the 41 MAF described in the Master Water Control Manual. They contend there would be both environmental and economic damage and that such a major change requires some kind of

environmental evaluation.

According to a COE news release, every plan since 1991 contained a similar provision. The navigation season was shortened by four weeks in 1990 and five weeks in both 1991 and 1992 when storage levels were greater than 41 MAF. "The Corps' Missouri River Division has broad flexibility to manage the releases from the dams and this adjustment is well within our authority," said Bob Mahoney, Chief Counsel.

During the six years of drought over most of the Missouri River basin in the late 1980s and early 1990s, the Reservoir Control Center (RCC) staff refined their knowledge of the river. The current Master Manual does not provide for high enough flows in the winter during the dry times to avoid problems caused by river ice. Intakes for municipal drinking water and cooling water for powerplants along the river can be left high and dry. Also, it is necessary to release more water in the spring to encourage two shore birds protected by the Endangered Species Act to nest higher on the Rivers' islands and sandbars. The higher flows are needed to avoid being locked into a low release from mid-May to mid-August.

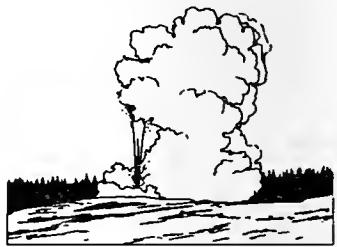
These two lessons demonstrate that it is necessary to institute water conservation measures earlier in a drought than originally envisioned so there is still water to meet the needs of all authorized purposes, but at reduced levels. The chances of the storage level on July 1 being 52 MAF are extraordinarily remote, according to Dave Wooster, acting chief of the RCC. Current storage is 60.3 MAF. With normal runoff this spring and early summer, the forecast for storage on July 1 is approximately 64 MAF. There is a 10% chance it could be as low as 60 MAF and a 10% chance it could be as high as 68 MAF. Even if runoff was

only half of normal, as in 1988, the July 1 storage would be greater than 52 MAF. No court date has been set.

Contact: US Army Corps of Engineers, Missouri River Division, Public Affairs Office, 12565 West Center Road, Omaha, Nebraska 68144-3869

Yellowstone Mine Update

The 9th U.S. Circuit Court of Appeals recently upheld a ruling which found Crown Butte Mines Inc. liable for Clean Water Act violations associated with some of its decades-old mine works at the Henderson Mountain site, despite the fact that the company never operated them. The site is close to Crown Butte's proposed New World Mine near Yellowstone National Park.



The decision supports an October 1995 lower court ruling that Crown Butte and its parent companies, Crown Butte Resources Ltd. and Noranda Minerals Corp., had a responsibility to clean up site wastes since they were located on their property. Civil penalties for the violations, to be determined in the upcoming trial, could run to \$135 million, the Sierra Club Legal Defense Fund said. The fine is based on daily charges of \$75,000 assessed against companies who fail to obtain Clean Water Act permits and specify a monitoring and cleanup program.

Wyoming state Sen. Hank Coe (R) has said he plans to sponsor

legislation to help control the effects of the proposed mine on Wyoming communities. One plan outlined under the mine's draft environmental impact statement calls for trucking mine tailings to a proposed storage site in Wyoming. Coe's bill would amend the state's Industrial Siting Act to apply to facilities located outside of Wyoming but that store waste in the state, a change which would require Crown Butte officials to develop a plan with local authorities to mitigate the mine's impact on area communities. Dennis Hemmer of the Wyoming Department of Environmental Quality said, "One of the issues throughout has been the fact that the mine is located in Montana but the impacts are in Wyoming".

In the meantime, the UN delegation's September 1995 visit to the mine site (reported in the Sept./Oct. issue of "*River Crossings*") "has spurred outrage among some Westerners who accuse the international body of meddling in domestic policy." Department of the Interior Assistant Secretary George Frampton who invited the UN Environmental, Scientific and Cultural Organization's World Heritage Committee to evaluate the proposed site has been "blasted" by Sen. Alan Simpson (R/WY) and Rep. Barbara Cubin (R/WY).

After its visit, the UN committee declared Yellowstone "in danger" under a 1972 World Heritage Treaty signed by the U.S. Simpson called the visit "a terrible intrusion", while Cubin questioned whether Frampton wants "foreigners to determine our environmental requirements." "Doesn't he know that the United States has the strictest environmental regulations on the planet?", Cubin said. The UN Committee, however, has no legal authority over the site and can only list and de-list.

Source: Greenwire Vol. 5, No. 183, 189, and 206

Mississippi River Coliforms Reach High Levels

Concentrations of fecal coliform bacteria in much of the Mississippi River from Minneapolis-St.Paul to the Gulf of Mexico exceed federal limits set to protect swimmers and other river users, according to a new study by the U.S. Geological Survey (USGS). The USGS began the \$7 million, five-year study in 1987 by taking samples of river water from St. Louis to the Gulf, and expanded it in 1990 to test the river upstream to Minneapolis. The study is the largest ever done on Mississippi River water quality.

The USGS said that while the river looks cleaner than it did 20 years ago, it is still carrying dissolved contaminants and bacteria generated by municipal, agricultural, industrial and natural sources. While the bacteria from human and animal wastes survive briefly in river water, they are present at high levels in many areas due to poor sewage treatment, the study said.

In addition, the study found concentrations of PCBs in Lake Pepin sediments -- the widest part of the Upper Mississippi -- suggesting that the Twin Cities region has been the greatest PCB contributor on the upper river. USGS chief hydrologist Bob Hirsch said the study represents a "report card" for cleanup efforts on the river and all its tributaries. But he added that "because this is the first evaluation ever attempted on this scale, it's hard to talk about trends or what areas show improvement or failure."

Source: Greenwire Vol. 5, No. 221

Fish and Wildlife Service Launches Clean Waterways Campaign

As part of a major effort to clean up the Nation's waterways, the U.S. Fish and Wildlife Service (FWS) has announced a series of grants to state conservation agencies encouraging recreational boaters to bring boat sewage to shore. Under provisions of the Clean Vessel Act (CVA), the FWS is awarding \$9.4 million in grants to 33 states for projects nationwide to provide pumpout and dump stations for disposal of boat waste in an environmentally safe manner.



Last year, some 77 million boaters who owned more than 16 million boats plied U.S. waters according to the latest statistics gathered by the National Marine Manufacturers Association, a partner in this endeavor. When simply dumped overboard, boat sewage poses a serious threat to U.S. oceans, rivers, and lakes.

Bacteria found in boat sewage not only pollutes water but also contaminates shellfish and depletes the water's oxygen levels, causing stress to fish and other aquatic animals. A 1995 study of boat sewage on San Francisco Bay conducted by the California Regional Water Quality Control Board concluded that one person discharging raw sewage into the bay has the same effect as 10,000 or more people whose waste is processed through a sewage plant before discharge.

"Since the act was passed in 1992, pumpout facilities have increased from about 1,000 to 2,500," Robert Pacific, FWS CVA

Administrator, said. "The authors of this legislation recognized that boaters would use accessible and affordable pumpout facilities rather than dump boat sewage overboard." Pacific also said the FWS is working closely with boating and fishing groups to get the boating public involved in using pumpout stations. For example, the FWS and the American Sportfishing Association's Sportfishing Promotion Council have established a toll-free telephone number (1-800-ASK-FISH) that boaters anywhere in the country can call to find out the location of pumpout facilities.

Another partner, Boat/U.S. Clean Water Trust, has produced numerous educational materials as well as a sourcebook to help disseminate CVA information. The States Organization of Boating Access (SOBA), has sponsored CVA workshops for states. Pumpout manufacturers are directly participating in the program and have agreed to display the new internationally recognized pumpout logo on their equipment and to include educational information packages with that equipment. The FWS has produced a multi-media public service campaign designed to heighten awareness of the severity of the pollution problem and to urge boaters to bring sewage to shore. A video public service announcement produced in cooperation with the Marine Retailers Association of America will begin airing in late February, a radio PSA is in production, and print PSAs will appear in boating and fishing magazines this spring. Fact sheets, posters, stickers, and brochures all telling the story of the CVA are now available for public dissemination.

Federal partners include the U.S. Coast Guard, the National Oceanic and Atmospheric Administration, and the U.S. Environmental Protection Agency. Each agency helps the FWS review grant

requests and offers advice on the development of educational materials. Funding for the CVA comes from the Sport Fish Restoration Account of the Aquatic Resources Trust Fund, commonly known as the Wallop-Breaux Fund. Monies in that fund result from a 10% excise tax on fishing equipment and a 3% tax on electric trolling motors and sonar fish finders, a portion of the Federal fuels tax, and import duties on fishing tackle and pleasure boats. The CVA Pumpout Grant program makes matching grants available through a competitive process to all states, which match these funds at a ratio of 3:1 (Federal:state). To date, CVA grants total nearly \$30 million.

The projects selected for 1996 involve requests for construction of 938 pumpout stations and 470 dump stations in 33 states, aquatic education programs in 30 states, and miscellaneous projects such as upgrading waste management facilities to accept marine sewage as well as operation and maintenance of pumpout and dump stations.

The following Mississippi River Basin projects will be funded this year:

Alabama (\$130,000): 24 pumpout stations, 6 dump stations and an education program.

Arkansas (\$48,000): 4 pumpout stations and an education program.

Colorado (\$50,000): 1 pumpout station and 1 dump station.

Georgia (\$118,000): 3 pumpout stations, 5 dump stations and an education program.

Illinois (\$57,000): 21 pumpout stations, 2 dump stations and an education program.

Indiana (\$152,000): 22 pumpout stations and an education program.

Kentucky (\$17,000): 2 pumpout stations and an education program.

Louisiana (\$256,000): 26

pumpout stations and an education program.
Michigan (\$108,000): 50 dump stations and an education program.
Minnesota (\$50,000): 10 pumpout stations, 10 dump stations and an education program.
Mississippi (\$55,000): 10 pumpout stations and an education program.
Missouri (\$32,000): 4 pumpout stations and an education program.
New York (\$980,000): 178 pumpout stations and an education program.
North Carolina (\$51,000): 15 pumpout stations and an education program.
Oklahoma (\$29,000): 2 pumpout stations.
Pennsylvania (\$33,000): 1 pumpout station and an education program.
Tennessee (\$98,000): 90 pumpout stations, 48 dump stations and an education program.
Virginia (\$814,000): 75 pumpout stations, 75 dump stations and an education program.
Wisconsin (\$70,000): 10 pumpout stations and an education program.

Contact: U.S. Fish and Wildlife Service, Robert Pacific (703) 358-1845 or Patricia Fisher (202) 208-5634

Iowa/Missouri May Toughen Hog Laws

County supervisors in Iowa would be given "broad new authority" to determine where large hog confinements could be built under a bill approved on March 6th by the Iowa state Senate. The measure also would require smaller operators to contribute to a fund for cleaning up manure spills or other environmental damage caused by feedlots.

Critics of large hog farms say local control is essential for rural

residents to be able to protect their property values and comfort. But "opponents warned that the restrictiveness of the bill could spell the end of economically significant pork production in Iowa".

A separate measure passed by the Senate on March 4th would deny feeding-facility permits to chronic violators of environmental regulations. Both measures now go to the Iowa House, "where passage is doubtful". "Key lawmakers ... have made it clear" they want to allow livestock regulations, "which were enacted a year ago, a chance to work before approving significant changes".

The Missouri House Agriculture Committee on March 6th approved a resolution that would direct the state to stop issuing construction permits for large hog-raising operations until June 15th. The moratorium, which has been approved by the state Senate, will give lawmakers time to develop new, tighter regulations for the large hog farms, according to state Senate President Pro Tem James Mathewson (D), the bill's sponsor.

Source: Greenwire Vol. 5, No. 209

Lead Mining Company Fined for River Pollution

The Asarco lead mining company has agreed to pay \$1.7 million to Missouri for discharging "excessive" amounts of lead into a tributary of the Black River, marking the largest pollution penalty ever in a state suit. The penalty follows another one levied on January 5th, when Asarco agreed to pay a \$3.5 million fine to the US EPA for discharging pollutants from its Omaha lead refinery into the Missouri River.

Under the latest settlement, Asarco will pay the state \$1.7

million and build a new wastewater treatment plant for its mine on the West Fork of the Black River in Reynolds County, MO. Asarco claims the new plant will cost up to \$500,000. The \$1.7 million fine will go to the Reynolds school system.

Source: Greenwire Vol. 5, No. 190

Ohio Law to Increase Pollution

A coalition of enviro and outdoor sports groups on February 20th failed in an attempt to defeat a new Ohio rule that will allow increases in pollution discharges into most state waterways. Opponents of the so-called anti-degradation rule testified in a "marathon four-hour session" before the Joint Committee on Agency Rule Review, comprised of members of the Ohio House and Senate, but they still failed to win enough votes to overturn the rule.

Under the "complicated" new rule, industry and some 1,200 municipal waste-water treatment plants will be allowed to increase discharges and lower water quality in up to 96% of Ohio's 61,000 miles of waterways. Many increases will occur without public review and some without public comment. The rule is based on the assumption that rivers can absorb more pollution without endangering water quality. It must now be approved by the US EPA or rejected within three months before it becomes effective.

Opponents have filed a lawsuit in a Franklin County, OH court challenging the rule. A ruling is expected on the matter this summer.

Source: Greenwire Vol. 5, No. 198

Greenwashing

The "widespread use" of environmentally friendly names by groups "whose agendas have little to do with the welfare of the environment" is "industry's grudging tribute to the [popularity of the] environmental movement," reports the *New York Times*.

For example, "Washington insiders" several months ago created "*Northwesterners for More Fish*" (NMF) to assist big utilities and other companies under attack by enviros for depleting fish populations. According to a NMF memorandum given to the *New York Times* by enviros, NMF has a \$2.6 million budget for the next year to establish itself "as a credible group supporting solutions to enhancing fish populations." It hopes to limit federal efforts to protect endangered fish if those efforts might interfere with industries that rely on the river. The budget includes \$800,000 for television and radio advertisements and \$100,000 to identify and influence "supportive" members of the news media.

The memorandum says NMF's message must go beyond a "rational approach": "While the public can and should be swayed by having the facts on the issue, the message must also appeal at a gut, emotional level." One of NMF's organizers, Eddie Mahe, former deputy chairman of the Republican National Committee, referred calls to Seattle-area consultant Kay Gabriel, who said she was not free to say what companies were paying the bills for the group.

The Wilderness Society's Bennett Beach said groups like NMF are becoming increasingly common as industry sees more polls saying that many Americans think of themselves as enviros: "No one wants to dance with the devil, so they try to come up with a name

that's not too devilish".

Source: Greenwire Vol. 5, No. 219

Senate Passes Grazing Bill

The Senate recently voted 51-46 to approve a GOP-backed "major overhaul" of laws governing livestock grazing on the West's federally owned lands. The bill, sponsored by Sen. Pete Domenici (R/NM), gives ranchers greater control over federal rangeland by supplanting a 1995 Department of the Interior (DOI) rule that gave non-ranchers, such as enviros, more input into land-management decisions. The Bill would increase grazing fees by 37%, or about 50 cents, to \$1.85/ grazing unit month. It would also exempt individual grazing decisions from the National Environmental Policy Act and weaken regulations requiring ranchers to protect fragile streams.

Before approving the Domenici bill, the Senate rejected an alternative offered by Sen. Dale Bumpers (D/AR) that would have raised grazing fees from \$1.35 to \$2 -- still well below the costs charged for use of state-owned and private land in the West. The Bumpers bill would have imposed "massive" increases on ranchers raising at least 2,000 animals on federal land.

Western lawmakers had argued that small ranchers needed relief from the DOI policy, which they claim "threatens to drive them out of business". Critics contend that the Domenici bill will freeze the public out of decision-making and force federal agencies to disregard enviro considerations when making grazing decisions. Western GOPers say the bill is a way to protect the West's lifestyle and argue they have made concessions -- from placing more emphasis on enviro goals to allowing more public participation in rangeland decisions.

Ranchers had worked hard to "fend off accusations" that they are "just another special interest group trying to avoid" enviro regs and that grazing permits amount to corporate subsidies. Wyoming rancher Truman Julian said, "Basically, this bill is our livelihood." The debate showed the intense hostility among Republicans from ranching states to the Clinton Administration's land use policies, and the personal grudge they bear against Interior Secretary Bruce Babbitt. The measure has yet to be considered by the House. Senate Minority Leader Tom Daschle (D/SD) said the bill would likely be vetoed by President Clinton.

Greenwire Vol. 5, No. 215, 217 and 218

Ozone Depletion and Fish

Global warming, acid rain and ozone layer depletion are creating a deadly combination for fish and other life in lakes and streams, according to researchers from the University of Alberta. Carbon dissolved in water absorbs radiation from the sun, protecting aquatic plants and animals. But now global warming and acid rain are reducing the level of carbon dissolved in lakes and streams, potentially wiping out that layer of protection for resident species, the scientists say.

Over the past 20 years, the researchers took samples from several lakes in northwest Ontario. During that time, carbon levels in the lakes dropped by 15-20%, allowing ultraviolet radiation to penetrate 22% to 63% deeper. "In the lake with the highest acid levels, ultraviolet radiation penetration increased from one foot to more than nine feet." Temperatures rose 1.9 °F and rainfall fell by 25% during that period.

"Extra radiation could become one more stress that pushes a species

over the edge into extinction, [the researchers] said." Trout, for example, can get sunburned and become more prone to potentially fatal fungal infections. The scientists estimate that about 140,000 of the nearly 700,000 lakes in eastern Canada may have carbon concentrations "low enough for UV-B radiation penetration to be of concern".

The Earth's average surface temperature in 1995 was 52.36 °F, the second-warmest year on record, according to the U.S. National Weather Service (NWS). That figure conflicts with preliminary data issued earlier this year from Britain's University of East Anglia, which found 1995 surface temps were the hottest on record at 58.72 °F. The NWS said the University of East Anglia's numbers were based mostly on land measurements and did not include late December 1995 temperatures, which were very low.

Source: Greenwire Vol. 5, Nos. 193 and 198

Pallid Sturgeon Bibliography

An annotated bibliography on the pallid sturgeon *Scaphirhynchus albus* has recently been prepared by Walter Duffy, Charles Berry,



"Pallid Sturgeon"

and Kent Keenlyne through the South Dakota Cooperative Fish and Wildlife Research Unit, Brookings, SD.

Copies of the bibliography can be obtained from Mark Dryer or Sharon Schweigert at the U.S. Fish and Wildlife Service Office in Bismarck, ND, (701) 250-4419.

Another Sturgeon Genetics Evaluation

A University of Florida (Gainesville) sturgeon genetics study was released by the U.S. Fish and Wildlife Service on February 20th. This study was completed by Donald E. Campton, Angelica I. Garcia, Brian W. Bowen, and Frank A. Chapman of the Department of Fisheries and Aquatic Sciences. Its abstract follows:

"Pallid and shovelnose sturgeon of the Mississippi River drainage, and Alabama sturgeon of the Mobile River drainage, are currently classified as distinct species: *Scaphirhynchus albus*, *S. platyrhynchus*, and *S. suttkusi* respectively. However, the taxonomic and evolutionary distinction of these three species has recently been questioned. To investigate these evolutionary relationships further, we



"Shovelnose Sturgeon"

compared a 435 base pair sequence of the mitochondrial DNA (mtDNA) control region among 18 pallid, 20 shovelnose, and 3 Alabama sturgeon. The former two species were collected together from a region of natural sympatry in the upper Missouri River. Alabama sturgeon were obtained from a remnant population in the Alabama River. Sequence comparisons among the three species revealed nine mtDNA haplotypes distinguished by a total of 16 base substitutions (transitions) and one single base insertion/deletion. The maximum sequence divergence among those haplotypes ($p = 2.08\%$) and the observed nucleotide diversity for *Scaphirhynchus* ($\pi = 0.58\%$) were similar to those within conspecific populations and were less than

half the respective values reported previously for white sturgeon (*Acipenser transmontanus*). No fixed nucleotide substitutions (typically observed in interspecies comparisons) were observed between pallid and shovelnose sturgeon. However, haplotype frequencies were quite distinct ($P < 0.001$) between the two species. For example, 13 of 20 shovelnose sturgeon possessed two haplotypes ($n = 8$ and 5, respectively) that were absent among the 18 pallid sturgeon analyzed. These mtDNA data provide the first genetic evidence that pallid and shovelnose sturgeon are reproductively distinct, or are mating assortatively, in a region of natural sympatry. Although this type of haplotype frequency shift characterizes population-level separations in most other species of fish, similar levels of divergence have been reported between species of very recent origin (e.g. African cichlids, $<50,000$ ybp). A unique haplotype characterized the three Alabama sturgeon; however, that haplotype differed from the most common pallid/shovelnose haplotype by only a single base-pair substitution. Based on this latter result and biogeographic considerations, Alabama and shovelnose sturgeon appear to be evolutionarily distinct, but the observed level of genetic divergence is typical of isolated populations or subspecies within other species of fish. Despite the very close evolutionary relationship of *S. albus*, *S. platyrhynchus*, and *S. suttkusi*, the mtDNA data support the genetic distinction of all three species on the basis of their apparent reproductive isolation and microevolutionary divergences."

Contact: U.S. Fish and Wildlife Service, Bismarck, ND, (701) 250-4419.

Endangered Species Act Policies

Three documents addressing scientific policy issues under the Endangered Species Act (ESA) were released on February 9th by the Interior Department's U.S. Fish and Wildlife Service (FWS) and the Commerce Department's National Marine Fisheries Service (NMFS). The documents are part of Secretary Babbitt's goal to make certain that ESA implementation is grounded in sound science. They include:

- A proposed rule on the treatment of intercrosses and intercross progeny.
- A proposed policy to establish consistency in controlled propagation (captive breeding) programs for species that are listed as endangered or threatened.
- A notice of policy designed to clarify the definition of "distinct population segments" for purposes of listing, delisting, or reclassifying species under the ESA.

Intercross Rule: The proposed "intercross" rule allows for protection of intercross progeny of a listed species but only under specific and limited circumstances. For the purposes of recovery of listed plants and animals, the proposed intercross policy will help biologists identify the potential or actual use of intercrossing as a conservation tool. Techniques available for the conservation of species are improving as scientific research enhances our understanding of conservation needs in the field. For example, cougars from eastern Texas have been released in Florida to help stem the decline of the Florida panther. The offspring will be protected as part of the panther's recovery effort. Both species are believed to have crossbred when the panther had a natural range that extended farther west and the Texas cougar farther east. The document uses the terms "intercross" and

"intercross progeny" rather than "hybrid" and "hybrid offspring" to reflect current language in the evolutionary and genetic sciences. The proposed intercross rule is intended to reflect advances in genetic science but would apply to a very few species while clarifying an area "which has been an occasional problem both for biologists and legal analysts through the years. The intent certainly is not to protect 'hybrids' under the act but rather to define how we will deal with these issues in conserving listed species."

Controlled Propagation Rule: The proposed policy on controlled propagation provides guidance and establishes consistency in programs that involve captive propagation of listed species. The proposal supports the controlled propagation of listed species when recommended in an approved recovery plan and supported by an approved genetics management plan, and when efforts to recover species or reduce threats to populations in the wild are insufficient.

Purposes of controlled propagation addressed in the joint agency policy include (1) avoiding extinction, (2) maintaining genetic vigor, (3) maintaining populations of nearly-extinct animals or plants on a temporary basis until threats are alleviated, (4) providing individuals for establishment of new self-sustaining populations, (5) supplementing or enhancing wild populations to enable recovery of a listed species, and (6) holding offspring for part of their development or through a life stage that cannot be supported in the wild. Captive propagation is viewed as an expensive last resort, but has also been the key to recovering species such as the California condor and the black-footed ferret.

Distinct Population Segment: The "distinct population segment" policy notice is designed to clarify that term for listing, delisting, or

reclassifying species under the ESA and applies to vertebrate animals that may be endangered or threatened in part of their range but are more numerous elsewhere. The ESA protects species, subspecies, and, "...any distinct population segment of any species of vertebrate fish or wildlife..." which are endangered or threatened. (Vertebrate examples on the list include the gray wolf, grizzly bear, and woodland caribou. Bald eagle populations, for example, are healthy in Alaska but in the Lower 48 States they nearly became extinct and remain "threatened.") Under the new policy, three elements--discreteness, significance, and status--will be considered in any decision to add a distinct population segment to the official list of endangered and threatened species:

Discreteness: A population segment could be considered "discrete" if it satisfies one of the following criteria:

- if it is separated from other populations as a consequence of physical, physiological, ecological, or behavioral factors or;
- if it is delineated by an international political boundary that coincides with differences in control of exploitation, habitat management, conservation, or regulation.

Significance: A population segment could be considered significant if there is evidence that its loss would leave a significant gap in the range of a species or if there is evidence that it differs markedly from other populations of the species in its genetic characteristics.

Status: Is the population segment, when treated as if it were a species, endangered or threatened?

The distinct population segment policy will govern interpretations for both U.S. and foreign species and will clarify how both the FWS and NMFS make decisions relative to listing populations under the act.

All three documents were published in the February 7, 1996, Federal Register.

Contact: U.S. Fish and Wildlife Service, Ken Burton (202) 208-5634.

Supreme Court to Rule on ESA Suits

In a case that has "great environmental implications for the Pacific Northwest" the Supreme Court recently agreed to decide whether people who want to stop the federal government from protecting an endangered species have a right to sue. The Ninth Circuit Court of Appeals in September 1995 ruled that only those who are seeking to protect wildlife on the endangered species list may go to court to enforce the Endangered Species Act (ESA). That ruling is being appealed by two Oregon ranchers and two Oregon irrigation districts.

The ranchers and irrigation districts in the early 1990s sued to set aside a finding by the U.S. Fish and Wildlife Service (USFWS) that more water must be kept in reservoirs of the Klamath Irrigation Project in parts of OR and CA to protect two endangered fish, the Lost River sucker and the shortnose sucker. The plaintiffs, who would lose water under the plan, claimed the USFWS failed to abide by an ESA provision requiring consideration of the economic impact before designating a critical habitat for a species.

The Ninth Circuit upheld a 1993 decision by the Federal District Court in Eugene, OR to dismiss the lawsuit, saying the plaintiffs had no standing. The ESA contains a "citizen suit" provision permitting "any person" to file a lawsuit charging that federal officials failed to carry out the law properly. The federal court ruled that this provision did not apply to suits seeking less rather than

more environmental protection.

In his opinion for the Ninth Circuit, Judge Stephen Reinhardt said the plaintiffs "seek only a greater share of the water and do not contend that compliance with the Act will improve the fish's lot." Rather than serving the purpose of the law, "[the plaintiffs] claim a competing interest," he said. But in their appeal to the Supreme Court, the plaintiffs argue that the Ninth Circuit has misinterpreted the intent of Congress to make citizen suits available to "any person" rather than only to "one apparently favored group".

Source: Greenwire Vol. 5, No. 220

The Noah Movement

For a time last year when the Endangered Species Act (ESA) was under Republican-agenda assault, its allies appeared not to have a prayer. Now they do -- plus a strategy, an organization and a born-again Catholic at the Interior Department holding the faith and sharing the hope.

In late January, Interior Secretary Bruce Babbitt invited to his office 10 religious leaders who came to tell the Secretary, and the country, about their group, the Evangelical Environmental Network (EEN), which is centered in Wynnewood, Pa.

Some were theologians, others pastors. All were committed to strengthening, not weakening, the ESA. All have political differences on other issues, but on this one solidarity prevails. They are one with the views of the EEN's co-founder, Calvin DeWitt, a professor of environmental studies at the University of Wisconsin-Madison: "People in their arrogance are destroying God's creation, yet Congress and special interests are trying to sink the Noah's Ark of our day -- the ESA. Few legislative issues ought to be

as clear as this one. Christian faith teaches respect for the works of God, and the ESA offers real and fair protection for all His creation, including us."

Babbitt is devoutly grateful for the evangelicals' support. Their power base extends to 30,000 churches -- potential "Noah Congregations" -- whose pastors have welcomed the EEN's literature and materials. During the last year, the EEN has mailed "Let the Earth Be Glad" kits to 33,000 evangelical churches -- independents and various denominations -- urging them to become involved in environmental efforts. About 1,000 churches responded to the call to become "Noah Congregations," and many have instituted religious education classes in environmental studies, said the Rev. Stan L. LeQuire, director of the Pennsylvania-based organization.

People who read the Bible closely realize that "only the Creator has a right to destroy His creation," DeWitt said. They become concerned that "God's creatures are not being attended" and that "trampling on the earth is like trampling on Rembrandts." The image of the Garden of Eden is key to understanding the evangelical position on the environment, said Ron Sider, professor of theology at Eastern Baptist Seminary in Wynnewood, PA, and president of Evangelicals for Social Action, which founded the network. God created man and woman "to watch and care for the garden. . . . Any notion of walking all over it is fundamentally wrong."

Such thinking has brought evangelicals to the environmental debate. LeQuire said that the EEN is interested in clean air, global warming and other issues but that the ESA was an appropriate place to start.

Representatives Don Young (R/AK) and Richard W. Pombo

(R/CA), co-sponsors of a bill to overhaul the ESA, are not pleased. It is unclear how the evangelicals' campaign will influence the vote, but Young and Pombo are taking them seriously. The day after the EEN's news conference, Young and Pombo wrote a 1.5 page letter to DeWitt, urging the EEN "to be honest in your characterizations of others with viewpoints that may differ from your own. As religious people, you have a high obligation to seek the truth, even in the political arena." Young and Pombo said EEN's efforts "mischaracterize" the bill.

The two lawmakers also expressed concern about the EEN's planned a \$1 million publicity campaign to protect the existing Act, noting that big spending "must be based on the true facts in order to provide an honest discussion of this issue." "We are concerned that a spiritual reflection might be valuable," said Stan LeQuire, EEN Executive Director, "What would God think about endangered species?"

Young, chairman of the House Resources Committee, and Pombo, chairman of the House Task Force on the ESA, don't have the answer, but they do have some questions:

- Pombo's office wants to know why the EEN literature recommends a book by EEN director and University of Wisconsin Professor Calvin DeWitt. Is this a conflict of interest?
- And what about the EEN's affiliation with the Washington-based Environmental Information Center (EIC), a hangout for former Al Gore campaign types. "Is this 'Evangelical' group a front for the Clinton-Gore reelection committee?" Pombo's office wants to know.
- And what about abortion: "This group believes that all trees, fungus and rats are God's creatures and should be protected," Pombo's office said in

a FAX. "Do they have the same respect for human life as they do for plants and animals?"

Young, Pombo and Co. don't like the fact that the EEN is coming on like the Christian right. The EEN is "strictly" antiabortion, Leguire said, and "most of us, being evangelicals, are Republicans, including myself." Yes, DeWitt is a member of the EEN, but LeQuire is the Director, and the EEN simply lists DeWitt's book as suggested reading, LeQuire said. "We don't sell it."

LeQuire denies getting financial support from the EIC. The EEN simply asked the EIC to help set up their Jan. 31st news conference, because "We're not politically skilled."

The true fact is that the Young-Pombo bill faces heavy going, with or without divine intervention. The legislation softens what its supporters believe are unfair federal curbs on development within habitat areas. Opponents argue the bill guts the ESA in favor of large developers.

Young and Pombo found a sympathetic majority in the pro-development Resources Committee, but most Democrats and many moderate Republicans don't like it, and Clinton has promised a veto.

In this ambience, a scolding from God is about the last thing Young and Pombo need, but debunking the "Noah congregations" will be hard: "God told Noah to take every animal into the ark, not just those which were economically feasible, or cuddly, or useful for medicinal purposes," LeQuire said. "God said, 'I make my covenant with you, Noah, never again will I destroy life.' "

DeWitt said he "can hardly fathom" the intense interest the campaign has generated. He said so many phone calls are coming in that he barely has time to eat.

"I've been working over 30 years in evangelical environmentalism but I have never experienced anything like this," said the University of Wisconsin professor. "I guess we've finally hit on just the right words."

Sources: The Washington Post By Line Articles by Colman McCarthy (2/10/96), Bill Broadway (2/17/96), and Guy Gugliotta (2/27/96).

Prairie Preserve in Iowa and Minnesota

The U.S. Fish and Wildlife Service is considering a plan to preserve up to 100,000 acres of tall-grass prairie in Iowa and Minnesota, including a 520-mile corridor from Des Moines to the Canadian border in Minnesota. Howard Lipke, project manager, said tall-grass prairie is "one of the most important ecosystems within the contiguous states," and once supported bison, prairie chickens and more than 300 plant species, many of which are now rare. With less than 1% of original undisturbed prairie in the U.S. remaining, it is one of the most threatened habitats. Iowa's 31 million acres of prairie have dwindled to less than 30,000 acres.

Lipke said officials hope to finish a study of the preserve, which would be part of the National Wildlife Refuge system, within a year. He had no total cost estimate, but said land could be protected using public or private measures, including new purchases, incorporating parcels under lease or negotiating easement or management agreements. The Iowa Farm Bureau Federation's Emily Eide raised several concerns about the plan's impact on private property.

Source: Greenwire Vol. 5, No. 199

New Uses for Federal Wildlife Refuges

President Clinton recently issued an executive order that, for the first time, puts hunting, fishing, wildlife photography and wildlife conservation on a list of priority activities in the 92.3 million-acre National Wildlife Refuge System.

The order was spurred by a bill before the House, called the National Wildlife Refuge Improvement Act, that puts hunting and fishing "on an equal footing with conservation". The bill is similar to Clinton's order in that it would make hunting and fishing official purposes of the refuge system. But critics say the bill could also open refuges to jet skiing, power boating and other "inappropriate" activities. Interior Secretary Bruce Babbitt has threatened a presidential veto of the bill.

Under Clinton's new order, hunters' and fishers' rights are guaranteed in federal wildlife sanctuaries unless a park manager finds the activities are not consistent with public safety and "sound animal management." The old rules allowed refuge managers to permit limited hunting and fishing in cases where they didn't interfere with safety or harm wildlife populations. An Administration official said the order is intended to quell concerns among the U.S.'s 60 million sportsmen that Clinton is anti-hunting.

Steve Moyer of Trout Unlimited said the group is "generally supportive" of the order. But Jim Manown of the National Rifle Association said Clinton is "pandering to America's hunters in an election year." Manown called the order a "cover" for Clinton's opposition to the House bill.

Source: Greenwire Vol. 5, No. 220

NBS Folded into USGS

The temporary government spending measure signed by President Clinton on January 26 "dissolved" the nearly 3-year-old National Biological Service (NBS). NBS and its \$137 million budget were transferred to the U.S. Geological Survey (USGS). "Even that funding, though, will run out [on September 30], causing considerable concern for the

[NBS] biologists." Staffers aren't sure what the agency will now be called.

Source: Greenwire Vol. 5, No. 186

Publications Available

Schmidt, K. 1995. The Distribution and Status of Paddlefish (*Polyodon*

spathula) in Minnesota. North American Native Fishes Association. 1663 Iowa Ave. East, St. Paul, MN 55106.

Scarnecchia, D.L., P. Stewart, L.F. Ryckman, and K. Gilge. 1996. Montana-North Dakota Paddlefish Sampling Procedures. University of Idaho, Moscow, ID 83844-1136.

Meetings of Interest

May 16-17: 23rd Annual Conference on Ecosystems Restoration and Creation, Tampa, Florida. Contact: Frederick J. Webb, Dean of Environmental Programs, Hillsborough Community College, Plant City Campus, 1206 N. Park Rd., Plant City, FL 33566; (813) 757-2104.

May 18-23: 6th International Symposium on Society and Resource Management, Pennsylvania State University, University Park, PA. Contact: A.E. Luloff, program cochair, Dept. of Agricultural Economics and Rural Sociology, 111 Armsby Bldg., The Pennsylvania State University, University Park, PA 16802; (814) 863-8643, FAX (814) 865-3746.

May 20-24: 14th Annual National Conference of the Native American Fish & Wildlife Society, Fond du Lac Indian Reservation, Cloquet, MN. Contact: Ed Fairbanks (218) 335-8167 or Faith McGruther (906) 632-0043.

June 8-12: Watershed '96, Baltimore Convention Center, Baltimore, MD. Contact: 1-800-666-0206.

June 9-14: From Small Streams to Big Rivers - 17th Annual Meeting of the Society of Wetland Scientists, Kansas City, MO. Contact: Thomas Taylor, 6617 W. 101st St., Overland Park, KS

66212 (913) 551-7226, email: TAYLOR.THOMAS@EPAMAIL.EPA.GOV.

June 10-14: 20th Annual National Conference, Association of State Floodplain Managers, San Diego, CA. Contact: Diane Alicia Watson, ASFPM Executive Office, 4233 W. Beltline Hwy., Madison, WI 53711, (608) 274-0123, FAX (608) 249-4484.

June 11-14: Symposium on Social, Economic and Management Aspects of Recreational Fisheries, Dublin, Ireland. Contact: Dr Phil Hickley, National Rivers Authority, 550 Streetsbrook Road, Solibull B91 1QT, United Kingdom, Tel: 0121 711 5813 or FAX 0121 711 5824.

June 13-16: 7th Annual Protecting Mother Earth Conference, Cherokee, NC. Contact: Indigenous Environmental Network Conference Office, P.O. Box 2259, Cherokee, NC 22719, (704) 497-5203, FAX (704) 497-5033.

June 17-23: Society for Ecological Restoration 1996 Annual Conference, Rutgers University, New Brunswick, NJ. Contact: Society for Ecological Restoration, 1207 Seminole Highway, Madison, WI 53711, (608) 262-9547, FAX (608)

265-8557, e-mail ser@vms2.macc.wisc.edu

August 13-16, 1996: The DELTA: Connecting Points of View for Sustainable Natural Resources. Cook Convention Center, Memphis, TN. Contact: National Association of Conservation Districts, Delta Conference, 509 Capitol Court, NE, Washington, DC 20002, (202) 547-NACD.

September 22-28: INTECOL V International Wetlands Conference, University of Western Australia, Perth. Contact: UWA Extension Conference and Seminar Management, University of Western Australia, Nedlands, Perth 6907; 619 380-2433; FAX 619 380-1066; e-mail: uwext~uniwa.uwa.edu.au

October 23-26: 23rd Annual Natural Areas Conference and 15th North American Prairie Conference, Pheasant Run Resort and Conference Center, St. Charles, IL. Contact Karl Becker, (217) 785-8774.

July 1997, III International Symposium on Sturgeon, ENEL Training Centre, Piacenza, Italy. Contact: Dr. P. Bronzi, ENEL spa - CRAM via Monfalcone, 15 - 20132 Milan (Italy) phone: + + 39 - 2 - 72243412 or 3452, FAX: + + 39 - 2 - 72243496, E-mail: bronzi@cram.enel.it.

Congressional Action Pertinent to the Mississippi River Basin

Fish & Wildlife

S. 191 (Hutchison, R/TX) and H.R. 490 (Smith, R/TX) amends the Endangered Species Act imposing a moratorium on new listings and critical habitat designations.

S. 455 (Kempthorne, R/ID) clarifies consultation procedures under the Endangered Species Act on management of federal lands.

S. 503 (Hutchison, R/TX) freezes Endangered Species Act listings and critical habitat designations.

S. 851 (Johnston, D/LA) amends the Clean Water Act reforming the wetlands regulatory program. Hearings held July 19 and Aug. 2.

S.1152 (Conrad Burns R/MT) amends the Endangered Species Act with common sense amendments to strengthen the act; enhance wildlife conservation and management; augment funding; and protect fishing, hunting, and trapping.

S. 1364 (Kempthorne R/ID) reauthorizes and amends the Endangered Species Act and for other purposes.

S. 1365 (Kempthorne R/ID) provides federal tax incentives to owners of environmentally sensitive lands to enter into conservation easements for the protection of endangered species habitat, and for other purposes.

S. 1366 (Kempthorne R/ID) amends the IRS Code of 1986 to allow for deduction from the gross estate of a decedent an amount equal to the value of real property subject to an endangered species conservation agreement.

Senate on March 13 during consideration of H.R. 3019 approved an amendment by Hutchison (R/TX) and Kempthorne

(R/ID) to reduce funding for endangered species listings, and an amendment by Reid (D/NV) to restore funding for and ensure the protection of endangered species of fish and wildlife.

H.R. 1714 (Dooley D/CA) amends the Endangered Species Act to require expeditious review of species being considered for listing under the act or currently listed under the act.

H.R. 2160 (James Saxton (R/NJ) entitled "Cooperative Fisheries Management Act of 1995." Reauthorizes the Interjurisdictional Fisheries Act.

H.R. 2217 (Pete Geren D/TX) entitled the "Common Sense Amendments for An Endangered Species Act."

H.R. 2275 (Young, R/AK and Pombo, R/CA) reauthorizes and amends the Endangered Species Act. Marked up on October 12.

H.R. 2284 (Pombo, R/CA) provides incentives for the owners and operators of agricultural land to provide habitat for protected species.

Forests

S. 647 (Lott, R/MS) amends the Forest and Rangeland Renewable Resources Planning Act of 1974 to require that major changes to forest management plans be phased in over time to minimize impact to communities.

S. 1590 (Murray, D/WA) to repeal the emergency timber salvage sale program and for other purposes.

S. 1595 (Bradley, D/NJ) to repeal the emergency timber salvage sale program.

H.R 1089 (Cremeans, R/OH) ensures that acquisition of lands for inclusion in the National Forest

System does not result in a loss of tax revenue to the affected county.

H.R. 1439 (Metcalf, R/WA) amends the National Forest Management Act of 1976 to require that the Forest Service timber sale program be financed only by receipts from the sale of timber under the program. Senate Energy Committee held a hearing Nov. 29 on implementation of salvage logging. House Resources Committee held hearing on Dec. 19 on salvage logging and timber health issues.

Government Affairs

S. 169 (Grassley, R/IA) curbs the practice of imposing unfunded federal mandates on states and local governments.

S. 1001 (Glenn, D/OH) reforms the regulatory process, providing for cost-benefit analysis risk assessment of major rules, and calls for a review of existing rules.

S. 1346, (Abraham R/MI) requires periodic review of federal regulations.

H.R. 2500, (Michael Oxley R/OH) amends the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

H.R. 2827 (Saxton R/NJ) consolidates and improves governmental environmental research by organizing a National Institute for the Environment.

Grazing

S. 852 (Domenici, R/NM) and H.R. 1713 (Cooley, R/OR) provides for the uniform management of livestock grazing on federal lands. Passed the Senate.

H.R. 1713 (the Livestock Grazing Act) was approved by the House Resources Committee full committee action on September 12.

H.R. 1375 (Cooley, R/OR) provides for extension of expiring term grazing permits for lands within the National Forest System.

Mining

S. 504 (Bumpers, D/AR) amends the Mining Law of 1872, imposing a royalty on mineral operations and reforming the process for mineral development.

S. 506 (Craig, R/ID) amends the Mining Law of 1872 imposing a royalty on mineral operations and reforming the process for mineral development.

S. 639 (Campbell, R/CO) amends and reforms the Mining Law of 1872 providing for the disposition of locatable minerals on federal lands.

Parks

S. 964 (Johnston, D/LA) amends the Land and Water Conservation Fund Act of 1965 giving the Interior Secretary authority to collect entrance fees at National Parks for direct use on priority park maintenance and repair projects.

H.R. 260 (Hefley, R/CO) provides for a plan and management review of the National Park System, and reforms the process for considering additions to the system.

H.R. 1280 (Hefley, R/CO) establishes guidelines for determination of National Heritage Areas.

H.R. 1301 (Vento, D/MN) establishes the National Heritage Area Partnership Program.

H.R. 1449 (Roberts, R/KS) provides for establishment of the Tallgrass Prairie National Preserve in Kansas.

H.R. 1846 (Richardson, D/NM) establishes the Yellowstone Headwaters National Recreation Area within Montana's Gallatin and Custer National Forests

Public Lands

S. 93 (Hatfield, R/OR) amends the Federal Land Policy and Management Act providing for ecosystem management on public lands. Referred January 4 to Committee on Energy and Natural Resources.

S. 518 (Thomas, R/WY) limits federal acquisitions in states where 25% or more of the land is owned by the United States.

Senate Energy Committee approved for floor action **S. 907**, clarifying the authorities and duties of the Agriculture Secretary in issuing ski area permits on National Forest System lands and to withdraw lands within ski permit boundaries from the operation of the mining and mineral leasing laws.

S. 1031 (Thomas, R/WY) and H.R. 2032 (Hansen, R/UT) transfers lands administered by the Bureau of Land Management to the states. House Resources Committee held a hearing August 1 on H.R. 2032

S. 1151 (Burns, R/MT) establishes a National Land and Resources Management Commission to review and make recommendations for reforming the management of public lands

H.R. 2107 (Hansen, R/UT) amends the Land and Water Conservation Fund Act of 1965 to improve the quality of visitor services provided by federal land management agencies through an incentive based recreation fee program

Recreation

H.R. 104 (Emerson, R/MO) rescinds fees required for use of public recreation areas at lakes and reservoirs under jurisdiction of the Army Corps of Engineers.

Refuges

H.R. 91 (Sensenbrenner, R/WI) prohibits land or water acquisition for the National Wildlife Refuge System if wildlife refuge revenue sharing payments have not been made for the preceding year.

S. 1013 (Conrad, D/ND) authorizes the Interior Secretary to acquire land for the purpose of exchange for privately held land for use as wildlife and wetland protection areas.

H.R. 1112 (Brewster, R/OK) and S. 976 (Nickles, R/OK) transfers the Tishomingo National Wildlife Refuge to the state of Oklahoma.

H.R. 1675 (Young, R/AK) improves management and establishes purposes of the National Wildlife Refuge System.

H.R. 2679 (Barrett, R/NB) revises the boundaries of the North Platte National Wildlife Refuge

Rivers

H.R. 1260 (Johnson, D/SD) ensures equity in and increased recreation and economic benefits from the Missouri River system.

H.R. 1331 (Furse, R/OR) creates a voluntary non-regulatory technical assistance and grants program within the Natural Resource Conservation Service's existing Small Watershed Program.

H.R. 2939 (Gunderson, R/WI) provides for a Congressionally authorized test of the Mississippi Interstate Cooperative Resource Agreement in the Mississippi River Basin. Resource Committee hearing scheduled for May 9.

Takings

S. 135 (Hatch, R/UT) establishes a uniform federal process for protecting private property rights.

S. 145 (Gramm, R/TX) provides for protection of private property rights.

S. 605 establishes a uniform system for protecting property rights and compensating landowners adversely affected by regulations. Approved for floor action on Dec. 21.

H.R. 9 (Archer, R/TX) creates jobs, enhances wages, strengthens private property rights and reduces the power of the federal government.

H.R. 971 (Wyden, D/OR) ensures that homeowners have access to information and opportunities to comment on actions that may decrease home values, and establishes a compensation program for development that produces pollution or otherwise impacts home values.

Water and Wetlands

S. 49 (Stevens, R/AK) amends the Clean Water Act providing for exemptions to wetlands regulations and protection of property rights in Alaska.

S. 626 (Hatfield, R/OR) amends the Watershed Protection and Flood Prevention Act establishing a technical assistance and grant program for waterways restoration.

S. 639 (Warner, R/VA) authorizes civil works programs for the Army Corps of Engineers which preserves the navigation of channels and harbors and provides for flood control and storm damage reduction.

S. 1620 (Lautenberg, D/NJ) amends the Water Resources Development Act of 1986 to provide for the construction, operation, and maintenance of dredged materials.

H.R. 198 (Smith, R/MI) amends the Food Security Act of 1985 permitting conversion of wetlands smaller than one acre in size.

H.R. 226 (Dingell, D/MI) amends the Safe Drinking Water Act assuring the safety of public water systems.

H.R. 961 (Shuster, R/PA) reforms and reauthorizes the Clean Water Act. Passed the House May 16, 1995.

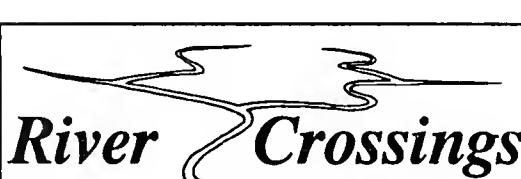
H.R. 1132 (Oberstar, D/MN) amends the Clean Water Act providing for improved non-point source pollution control.

H.R. 1262 (Pallone, D/NJ) amends the Clean Water Act improving enforcement and compliance programs.

H.R. 1268 (English, R/PA) establishes a comprehensive program for conserving and managing wetlands.

H.R. 1438 (Lowey, D/NY) amends the Clean Water Act to provide funding to the states for estuary conservation.

Source: Land Letter, Vol. 14, Nos. 17, 20, 24, 33 and Vol. 15, No. 2 and 6; and NOAA Legislative Informer, September 1995, Issue #15



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River Crossings

Volume 5

May/June 1996

Number 3

MICRA Paddlefish Report Available

The first year of the MICRA basinwide paddlefish stock assessment has been completed and is summarized in the following report: Oven, J.H. and F.C. Fiss. 1996. MICRA National Paddlefish Research - 1995 Interim Report. Mississippi Interstate Cooperative Resource Association, P.O. Box 774, Bettendorf, IA 52722-0774. 40 pp. Its Executive Summary follows:



paddlefish

The Mississippi Interstate Cooperative Resource Association (MICRA) planned, organized, and initiated a long-term multi-state, multijurisdictional paddlefish study to assess the condition of paddlefish stocks throughout the Mississippi River Basin. In just ten months MICRA has successfully completed multiple tasks in order to provide the first interim report of this important

national paddlefish research project. MICRA participants tagged and released 2,169 wild paddlefish and over 200,000 hatchery reared paddlefish into the basin's rivers by the end of 1995. A total of 4,128 rostrums were collected by MICRA cooperators. Of these fish 182 (4.4%) were tagged with coded wire tags. Thirty-four of these tags were actual MICRA tags that had been placed in wild paddlefish in 1995. Some of the tags recovered (142) originated from hatchery releases between 1988 and 1994. Movement data though cursory, showed that two of these hatchery fish had

moved approximately 550 miles from where they were originally released only one year earlier.

This report summarizes the projects first year's efforts, and is therefore inconclusive. Data collection for this project occurs daily so figures and totals of tagged and recaptured fish are continually changing. Much of the first year's effort was devoted to planning, organizing, standardizing, and field training. Project cooperators participate on differing levels, accommodating both existing programs within their own states and participating beyond their borders on a

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basin-wide scale for the overall benefit of the resource. The first paddlefish tagged and released for this project was in early 1995 at a meeting in Iowa where numerous state and federal biologists gathered to train for the study. The spirit of cooperation shown that day was to set the tone for the tasks that lie ahead. This unprecedented, cooperative project will undoubtedly help states and agencies better manage their natural resources, and enhance cooperation across borders. Thus beginning the process of decompartmentalizing our river resource management. Hopefully, through the cooperation and interjurisdictional management techniques set forth here, we can begin to learn the most effective processes required for big river management.

Ultimately we may find new ways to enhance and protect our fishery resources and insure the future of the fishery throughout the Mississippi River Basin. Let this project stand as a guide for building the road maps required for this unique type of interjurisdictional management."

A limited number of copies of the report are available at the MICRA Office.

MICRA Topeka Shiner Report

The Topeka shiner has been petitioned for listing on the Federal list of Threatened and Endangered Wildlife, and the U.S. Fish and Wildlife Service (FWS) provided a grant to MICRA to complete a follow-up survey to one completed in 1992 by Dr. Bill Pflieger (MO Dept. of Conservation) in the state of Missouri. MICRA contracted with the Missouri Department of Conservation in 1994 for this work. The survey was completed in 1995 and the final report (Gelwicks, G.T. and S.A. Bruenderman. 1996. Status survey for the Topeka shiner in Missouri. Mississippi Interstate

Cooperative Resource Association, P.O. Box 774, Bettendorf, IA 52722-0774. 15 pp. + Appendices) has just been received. It's abstract follows:

"Recent surveys conducted in Iowa, Kansas and Missouri indicate that the Topeka shiner (*Notropis topeka*) has declined throughout most of its historic range. This species is now a federal candidate C species, meaning that it is being considered for listing as an endangered species by the U.S. Fish and Wildlife Service. In 1992, W. L. Pflieger resurveyed 42 of 72 Missouri localities historically supporting Topeka shiners and found the species at only 8 sites. The purpose of our study was to resurvey 30 historic Topeka shiner localities not examined in 1992, and to survey

64 additional localities thought to potentially support the species. For this report, we combined the results of our 1995 survey, Pflieger's 1992 survey and other recent sampling efforts to obtain an accurate assessment of the current distribution and abundance of Topeka shiners in Missouri. Topeka shiners were found at only 14 of 72 (19%) historic localities in the state. We collected the species at six localities from which they had not been collected previously. Combined results confirmed the recent existence of populations of Topeka shiners in six drainage basins in Missouri: Moniteau Creek headwaters in Cooper and Moniteau counties, Bass and Bonne Femme Creeks (Bonne Femme Creek drainage) in Boone County, tributaries of Sugar Creek (Grand River drainage) in Harrison

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
(MICRA)
P.O. Box 774
Bettendorf, IA 52722-0774

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

County, Clear Creek and a tributary of Heath's Creek (Lamine River drainage), Cooper and Pettis counties, Dog Branch (Chariton River drainage) in Putnam County, and Cedar Creek (Des Moines River drainage) in Clark County. The species appears to have experienced recent population declines in all drainages except Moniteau Creek. Recent collections of relatively high numbers of adults and young-of-year Topeka shiners in Moniteau Creek suggest that the species is still viable in that drainage."

According to sources in the FWS, since the listing moratorium under the Endangered Species Act is now over, a proposal to list the Topeka shiner is anticipated in the very near future. This means that, within the next 12-18 months, we will likely see this species move from candidate to proposed status, and then to become a listed species provided Federal protection under the ESA.

A limited number of copies of the subject report are available at the MICRA office.

MICRA Freshwater Mussel SubCommittee Formed

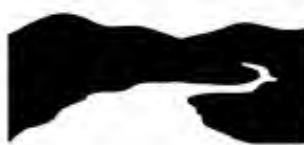
The Mississippi Interstate Cooperative Resource Association (MICRA) voted unanimously at its fifth annual meeting held in Spirit Lake, Iowa in late May to form a Freshwater Mussel SubCommittee.

Al Buchanan (Missouri Dept. of Conservation) will be the new subcommittee's first Chairman. The subcommittee will focus its attention on implementing portions of the National Freshwater Mussel Strategy in the Mississippi River Basin.

Contact: Al Buchanan, Missouri Dept. of Conservation, (314) 882-9880.

American Rivers 1996 Most Endangered Rivers List

American Rivers' eleventh annual list of North America's ten "most endangered rivers" includes rivers



American Rivers

threatened by "mines, dams, pollution, flood control projects and the 1996 Summer Olympics." But *American Rivers* considers the 104th Congress to be the greatest threat to America's rivers

The list includes the Clarks Fork of the Yellowstone River in MT and WY; the American River in CA; the Upper Chattahoochee and Etowah Rivers in GA; the Missouri River; the Upper Hudson River in NY; the Columbia River System in OR, WA and ID; the Elk River in OR; Pinto Creek in AZ; the Penobscot River in ME; and the Animas River in CO and NM.

"For an unprecedented third year in a row," the Clarks Fork of the Yellowstone River in Wyoming and Montana was listed as the nation's "most endangered river". This was because of the New World mine proposed for an area about two miles northeast of Yellowstone National Park.

The mine owned by Crown Butte Mines, Inc. would generate about 5.5 million tons of waste to be stored in a 74 acre reservoir at the Clarks Fork headwaters.

In an effort to stop the "huge" New World mine, Sen. Dale Bumpers (D/AR) on May 8 introduced legislation placing a permanent moratorium on new mining claims in the region. Bumpers's proposed bill also

would restrict mining activities on federal lands around the site and would prevent approval of mines that threaten to pollute water flowing into Yellowstone and other sensitive areas. According to Bumpers, "The message is not subtle. It's not intended to be".

American Rivers President Rebecca Wodder praised Bumpers's bill and encouraged Senate Majority Leader Bob Dole (R/KS) and the GOP leadership to immediately schedule a hearing and vote on the issue. But Crown Butte President Joseph Baylis, which intends to mine the gold, said the bill is "just one more example of the project's opponents using rhetoric rather than reason".

For the third-straight year, the Missouri River also made the endangered list. At the center of the Missouri River debate is the U.S. Army Corps of Engineers' Master Manual, which controls the river's flow through six large mainstem dams. The state of Missouri has filed a lawsuit claiming this year's planned water releases will harm farmers by impacting navigation and cutting grain shipments. The lawsuit asks that this year's plan be voided.

The Corps' proposed "Master Manual" changes would have altered river flows to more closely mimic natural conditions. The Corps is now working on a revised alternative plan scheduled for release in early 1997, but Scott Faber, director of *American Rivers'* floodplain programs said navigation is still considered the primary interest. "There are few other rivers where such an important decision will be made this year," Faber said. "An honest review would show there are very few economic benefits to Missouri River navigation."

John Ferrell, spokesman for the Corps' Missouri River office in Omaha, credited *American Rivers*

with keeping a public focus on the debate. "I don't think anyone here is opposed to *American Rivers*," Ferrell said. What we're saying is that this requires a cooperative effort. And we're willing to engage in that dialogue."

In the meantime, *American Rivers* is encouraging governments to continue buying Missouri River bottomlands from willing sellers to set aside as a natural flood water conveyance corridor which would also provide for wildlife habitat. Several programs in Missouri and elsewhere are now working toward this end, including one by the U.S. Fish and Wildlife Service to create the "Big Muddy National Fish and Wildlife Refuge" between Kansas City and St. Louis.

A major Missouri River tributary, the Kansas River, made the *American Rivers*' list, of 20 other "threatened" rivers. The Kansas River, joining the Missouri at Kansas City, was listed because of high levels of herbicides from farm runoff and a proposed dredging project in one of its most pristine stretches.

American Rivers said Congress should encourage practices to reduce farm runoff, rather than weakening or undermining agencies such as the Environmental Protection Agency through budget cuts or regulatory actions.

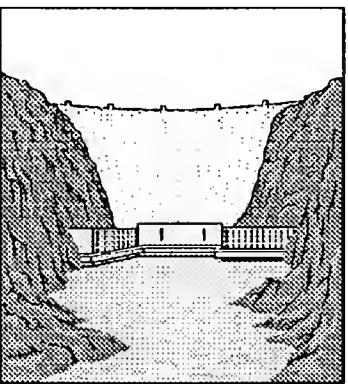
Sources: Columbia Tribune April 17, 1996, and Greenwire Vol. 5, No. 232 and Vol. 6, No. 10

Grand Canyon Flooding a Torrential Success

Artificial flooding of the Colorado River in the Grand Canyon in mid March "worked brilliantly," to restore beaches and wildlife habitat according to Interior Secretary Bruce Babbitt. The purpose of the simulated spring flood was to "stir up sediments

and help restore natural conditions".

It will take another five months to fully analyze the results, "but the evidence so far...is that the experiment worked". "What we found", Babbitt said, "is really quite extraordinary. The success of this event exceeds, I think, even the most optimistic hopes of our staff of scientists". The beaches lining the canyon have grown by as much as 30%, Babbitt said. Moreover, 80% of the new beach sediment was deposited in the first 40 hours of flooding, and all the new deposits were in place within 100 hours, suggesting that future floods will not have to last for seven days.



Dave Wegner of the Bureau of Reclamation said, "The challenge for us now is to see how long they (the beaches) will last". Scientists found little damage to endangered birds, fish and snails that live in the canyon, noting that the flooding has created backwater channels that can serve as habitat for endangered fish like the humpback chub. Bird habitats, Native American sites and the dam and its flood-control facilities also remained unscathed by the flood.

Interior Department figures indicate that the March floods created at least 55 large beaches, and two thirds of the newly created beaches are in the canyon's first 61 miles, an area that has been "almost barren" of

beaches since the dam was finished in 1963. In other findings, the "prized" trout fishery in Marble Canyon was not adversely affected by the flood, and backwater marshes "were scoured and restored" for endangered fish species. The resultant nutrient surge seemed to benefit all fish species.

The US Bureau of Reclamation and the US Geological Survey will continue gathering data and monitoring the beaches this summer. A final report on the findings is expected in September. Costs associated with the flood include \$1.5 million for research work during the flood, and an estimated \$2.5 million in lost electrical generating capacity. The final pricetag won't be known, however, until August.

Secretary Babbitt is touting the flood as "a very encouraging model for restoration across the American landscape". Possible targets for strategic flooding include the Florida Everglades, rivers in the Pacific Northwest, the Central Valley in California, the Mississippi River Delta and the Platte River.

Source: Greenwire Vol. 5, No. 232 and Vol. 6, No 18

Flooding and Application of GIS Technology

Interior Secretary Bruce Babbitt credited GIS technology as a major asset in garnering support for the recent Colorado River flooding experiment (see previous article). Babbitt made the following (summarized and paraphrased) comments at the ESRI - ARC/INFO User Conference in Palm Springs, CA, on May 21, 1996:

When the Interior Department first considered a different way of operating the Glen Canyon dam (including nature-mimicking floods) back in 1982, the idea

failed to take root. Almost everyone in the West understood that historic annual spring floods had been beneficial. But recreating them after the dam was built would, they thought, jeopardize their own interests:

- Hydroelectric power users in six states opposed any plan in which water would have to be passed around the generators, and thus reduce their power revenue;
- Water users in the four states of the upper Colorado River basin threatened to sue on grounds that the proposed water releases would violate the storage provisions of the Colorado River Compact;
- Trout fishermen and the Arizona Game and Fish Department complained that an artificial flood would wipe out the trophy trout fishery below the dam;
- Rafting outfitters worried they'd lose business from public fears and schedule changes;
- All eight Indian tribes that border the Grand Canyon voiced fears that rising waters would destroy petroglyphs, burial sites and other sacred archaeological remains; and
- Even Interior's own Fish and Wildlife Service fretted that floods might damage the riverside habitat of an endangered bird species called the willow flycatcher.

There was simply no precedent on the Colorado River -- or as far as we know anywhere in the history of civilization -- for what Interior was proposing to do. So Interior assembled an interdisciplinary team of scientists called Glen Canyon Environmental Studies. These biologists, hydrologists, geologists and ecologists began to integrate, map and share their data toward a common base.

Once the scientists opened up their notebooks, maps and models, hydropower users took a second look at their own economic models. Soon they discovered that their own initial

estimates of power revenue loss were at least two times too high. And as discussions widened, the utilities also realized that many power consumers were also sportsmen and environmentalists who favored restoring the river.

Then came the fishermen. Using a video display, scientists were able to create a virtual flood, allowing angling and outfitter groups to watch the water progress down the Canyon, submerging their favorite sandbars and shoreline camping spots. Not only were they assured that it was hardly a cataclysmic event, they were then drawn into discussing how a water surge might actually stir up nutrients in the system, and boost *Cladophora glomerata*, the alga that has developed in the clear cold water below the dam and that forms the



base of the aquatic food chain. This boost was later, in fact, precisely what occurred.

The Fish and Wildlife Service (FWS) -- still concerned about danger to endangered flycatcher nests and humpback chubs -- used flow models to assuage their fears. And when at the last minute they discovered an entirely new population of the endangered Kanab Ambersnail, they used the models again, in a preventative measure, to mark each snail then move them, one by one, farther up the bank to safety. In fact, GIS helped the FWS move forward with a non-jeopardy opinion that the flood would not cause lasting damage to them.

The Indian tribes, having lived on the land from time immemorial,

were understandably skeptical of any more manipulations of a river already compromised by modern technology. One week before the scheduled flood, the Hualapai tribe threatened to seek a court injunction. But after looking in detail at the hydrologic work of the U.S. Geological Survey, tribal leaders concluded that archaeological sites would actually receive more protection because additional sediment deposited would protect the sites from erosion.

Finally, the camera crews and helicopters and national correspondents began to arrive, all full of healthy skepticism about how a deluge of biblical proportions could benefit anyone or anything.

That was two months ago. A week after the flooding, satellite photos of the river showed dozens of sparkling new sandbars protruding above the water, and lining the riverbanks.

Some were piled 12 ft. high. Habitat was restored; fishing, rafting, power and water use quickly resumed without skipping a beat. Indian cultural resources remained undisturbed. In short, scientists found that the results exceeded their highest expectations.

The Glen Canyon example illustrates, in a most spectacular and complex landscape, how we, as a people, have begun to change the way we make decisions. And this change is now beginning in communities all across the country. I define here the word community in its oldest and truest sense: one in which people are united not by race, class, blood, work, or age...but by place. It is a community that identifies itself by the watershed

it shares: by the familiar neighbors, buildings, roads, weathers, soils, trees, birds, fish, crops and streams from which it lives. In scope that community may range as sparse and wide and complex as the Colorado River Basin, or as dense and small and complex as a city block.

GIS is not an end, but rather a means, it cannot be disembodied from our human values. The accumulation of data is meaningless unless it is underlain by a clear definition of our goals and our definitions about how we shall use and structure that science towards an informed, decision-making process.

As we used GIS as a tool to approach the complex challenges of Glen Canyon, that experience revealed three seminal lessons in how we, as a nation, shall reestablish strong, lasting, nourishing roots in our ever changing landscapes of complexity.

The first lesson is how GIS empowers us to see our landscape in an entirely new spatial dimension. We see not fragments -- structures, roads, minerals, animals, plants, water, soil -- but the whole watershed as one interconnected unit. Whether we call that unit an ecosystem, a landscape, or a web of life, it demands that we not take unilateral action before asking, then soon answering, how we can live lightly on this landscape and utilize its resources with forethought.

The second lesson from Glen Canyon is that sound decisions can only come through good science that is informed by local stakeholders. That means bringing more local stakeholders into the process of building consensus to resolve their conflicts. People instinctively assume that, like trench warfare, one party's gain must come at someone else's expense. And if

denied a voice in the process, a lawsuit may prove them right. By contrast, Glen Canyon shows how traditional adversaries, once given a say in reaching the outcome, can occupy the same common ground for different purposes. Sometimes those adversaries can even work together to actually enlarge the returns for everyone within the watershed community.

Paradoxically, resource disputes will only be resolved if we first complexify them. Complex does not mean confusing. It simply means deliberately expanding the issues involved; bringing in more local stakeholders; asking parties to check their ideological positions at the door; and engaging them in a place-based, information-loaded inquiry that uses all the tools of good science and data presentation.

The final, and perhaps most important lesson from the Glen Canyon experience is that GIS plays a critical role by helping inform a complex democratic society such as ours. Many different individuals and groups expressed concerns about the effects of the flood - trout anglers, power users, Indian tribes, and regulatory agencies. Indeed, the Department registered 33,000 written comments, which broke down into 2,300 separate issues and concerns. GIS integrates that information and enables every stakeholder to make use of it.

As more of our citizens become involved in decision-making within their communities, it is our responsibility in the public sector to ensure that they have access to the best information available. Unfortunately, GIS is a very expensive proposition, and we have seen over and over again the value of providing data to members of the public, other agencies and other organizations in ways that they can ask questions and conduct their own analyses. Ignorance can be a

powerful bias. Informed citizens will help shoulder the decision-making responsibility about land use, resource protection, and growth management issues.

Within the Federal government we have a policy that mandates public access to information. The Office of Management and Budget provides guidance specifying that all data and information collected with federal funds are accessible at no more than the cost of dissemination, unless specific laws prohibit this.

Many Federal agencies are now providing information free for the taking on the Internet and many package data on CD's at minimal cost to the public. These data are made widely accessible to other agencies, libraries and schools, and private companies that may redistribute the information. Within the Federal Geographic Data Committee we are working to ensure that standards and guidelines are in place to make these geographic data more usable.

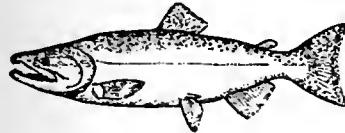
I firmly believe that we must guide and empower every single community in America with the ability to put down roots in their own unique landscapes of complexity.

More Natural Management of Columbia River Water

A panel of scientists on April 24 said the Columbia River must be operated more like a natural river, and less like a series of stagnant lakes, if its dwindling salmon runs are to be restored. "In a preliminary report that could shake up the region's approach to salmon recovery," the panel, which was commissioned by the Northwest Power Planning Council (NPPC), concluded that current efforts to save salmon fall far short of what is needed.

The panel specifically urged that

some reservoirs be periodically drawn down to restore fish habitat. The panel's report found that barging salmon would be unnecessary in most places if the river were operated to simulate normal seasonal fluctuations. The report is "the first strong scientific statement" in defense of drawdowns.



chinook salmon

The panel also concluded that fish hatcheries have been unsuccessful and should be curtailed and that more fishing controls would help prevent depletion of imperiled stocks. "Some hailed the scientists' briefing, a preliminary preview of a 500-page report due in June, as a potential turning point in the Columbia Basin's long, contentious battle between salmon advocates and commercial interest". Both industry and environmental leaders say the plan could pave the way for possible agreement on the salmon issue.

Source: Greenwire Vol. 6, No. 245

Round Goby Invasion

The round goby (*Neogobius melanostomus*) is the latest potential nuisance invader to the Mississippi River Basin's ichthyofauna. Like the zebra mussel, the round goby is now becoming established in the Great Lakes and may soon find its way into the Mississippi River Basin through the Chicago Ship and Sanitary Canal and down the Illinois River to the rest of the Basin. Its biology was described at a February 21-22 conference in Chicago organized by the Illinois Natural History Survey and Illinois-Indiana Sea Grant.

Round gobies were first found in North America in the St. Clair River, just south of Lake Huron, in 1990, along with the tubenose goby (*Proterohinlus marmoratus*). Both species are native to the Black and Caspian seas.

Tubenose gobies are "endangered" in Russia, but the Russian application of that definition is unknown. Both species have thrived in the St. Clair River and in Lake St. Clair downstream, where Michigan Dept. of Natural Resource trawl surveys catch them in large numbers.

The round goby has established two additional centers of distribution, in which it is abundant and spreading. These are Calumet Harbor on southern Lake Michigan, and the Grand River, a tributary to the central basin of Lake Erie. In all three locations, round gobies are caught in large numbers by anglers, sufficient to make angling for perch and walleye difficult (Tubenose gobies are not being caught by anglers.) Round gobies are said to be good-tasting, but bony. They are a major nuisance" for anglers in Lake St. Clair, but are a good fish for kids, because they are so easy to catch. The largest specimens in the Great Lakes have been about 180 mm (7 inches), but they get larger in their native range.

Round gobies have also been collected in Lake Superior (2 specimens in Duluth harbor in 1995) and Lake Huron (one specimen taken at Goderich, Ontario by an angler and photographed in 1994). A sighting in eastern Lake Ontario was made in 1995 by a qualified scientist, but no specimen was collected, so the sighting is treated as unconfirmed. So far, no round gobies have been found on the Mississippi River basin side of the Chicago Ship and Sanitary Canal. However, Illinois plans to look for them in 1996.

Round gobies have a fascinating, and not completely understood, life history. Females mature at one year of age, as small as 58 mm, and spawn every 20 days, up to six times, during the spring. Total fecundity is about 5,000 eggs. The eggs are cone-shaped and adhesive, clinging to rocks and other structure. Males guard the nests, and turn dark black when spawning. Males are said to die after spawning, but this may not always be the case. Males can live to be 5-6 years old. One hypothesis suggested to explain data on sex ratios and maturity is that females turn into males a year or two after spawning! Round gobies are benthic throughout their life, even when newly hatched.

As they grow, round goby diets switch from small benthos (chironomids and crustaceans) to mollusks. They eat large numbers of zebra mussels, about 70-80/day. Their pharyngeal teeth are ideal for crushing shells. They are selective for small zebra mussels, less than 9 mm in length. Round gobies 100 mm long can eat zebra mussels up to 15 mm long. Freshwater sponges were found in 1/3 of goby stomachs in one study; sponges are extremely difficult to identify in stomach samples, because they just look like partially digested mush. Round gobies eat some fish, and are cannibalistic. Many fish eat round gobies, especially smallmouth bass.

Male and female round gobies can generally be externally distinguished by their genital papillae. Round gobies have a distinctive black spot on their anterior dorsal fin, but about 20% of the Lake Erie specimens lack the spot. This appears to be unique in the species. Round gobies are difficult or impossible to age by scales, but Ohio State biologists think it can be done if one looks at many scales from a specimen. Otoliths may be better; University of Windsor biologists

are attempting to validate that technique.

Round gobies are often caught in trawls, but it is suspected that trawls are not very effective in sampling, because of avoidance behavior. Electrofishing is also not very effective because they stay close to the bottom when shocked. Angling has been used effectively to catch gobies, and SCUBA observations have also been useful.

Impacts on populations of mottled sculpins (*Cottus bairdi*) are already apparent. There is concern that the lake subspecies of mottled sculpin may be driven to extinction. Other species that may be affected include logperch and lake sturgeon. There is concern about predation on lake trout eggs and fry, but ongoing research by the Illinois Natural History Survey indicates that the mottled sculpin may be a more effective predator on lake trout than the goby. If round gobies colonize the Mississippi River Basin, there is concern about their impacts on darters, several of which are listed on the Federal List of Threatened and Endangered Wildlife.

Round gobies are behaviorally aggressive in defending optimal space. They are "smart" enough to turn over rocks to look for prey. They are larger than most competing species, feed in total darkness by sensing prey with their ultra-sensitive lateral line system, and they tolerate poor water quality. All of these factors give them competitive advantages over native species.

Concerns have been raised about the recycling of contaminants through the newly established food chains. Zebra mussels filter large quantities of lake water, and take up contaminants. Round gobies eat mussels, and are in turn eaten by larger fish. Preliminary modelling indicates that direct predation by gobies on

zebra mussels does not result in contaminant bio-magnification, but adding the intermediate step of *Gammarus* feeding on mussel feces, then being eaten by gobies, does indicate possible bio-magnification.

Last summer, Minnesota Sea Grant recommended in writing to the Aquatic Nuisance Species (ANS) Task Force that the round goby be declared an aquatic nuisance as defined by law, and that a control program be developed. The ANS Task Force responded that more information is needed, and there is a clear process that must be followed.

Contact: Tom Busiahn, USFWS
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Illinois River Zebra Mussels

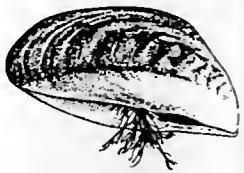
For the past three years Illinois River zebra mussel population dynamics has been studied at five locations (RM 181.0, 162.3, 66.8, 50.1, and 5.5). During spring 1993, a single settlement event produced a population explosion in the lower river (Alton Reach) with maximum densities of nearly 100,000/m². Second and third settlement events during late summer and early fall 1993 resulted in a much smaller population explosion in the middle river (La Grange and lower Peoria Reaches) with maximum densities near 15,000/m². By October 1993, the densest areas of newly settled zebra mussels at RM 5.5 and 66.8 had suffered 22% and 41% mortality, respectively.

During 1994, zebra mussel populations crashed at all study sites. Populations at RM 5.5 and 66.8 experienced greater than 99% population reductions between 1993 and 1994. In addition, very poor zebra mussel recruitment was recorded throughout the river in 1994. Successful recruitment was detected in June 1995 throughout

the Alton and lower La Grange reaches, with average densities of new recruits increasing in a downriver direction from 100 to 2,000 m⁻². However, between August and October 1995 these newly settled populations virtually disappeared.

By October, mean density at three sites in the Alton Reach was 7/m² (16 m² sampled) and 0.2/m² (18 m² sampled) for sites in the La Grange Reach; only 109 adult zebra mussels (> 20 mm) were collected in the lower 120 river miles from thirty-four 1 m² quantitative samples.

Water level fluctuations during the past three years may have contributed to the rapid rise and fall of Illinois River zebra mussel populations.



zebra mussel

Elevated water levels corresponded to three recruitment events in 1993 (May, July, and Sept.) and one in 1995 (June) suggesting that only under flood events are Illinois River water quality factors suitable for zebra mussel recruitment and survival. Poor water quality factors such as low dissolved oxygen (<3.0 ppm), high water temperatures (>30°C), and high turbidity (> 600 NTU) were recorded during low water periods in the past three years. These three water quality factors may be why zebra mussels continue to do poorly in the lower Illinois River.

In 1995 sampling with greater spatial resolution (i.e. a greater number of sites) revealed two additional discoveries one at RM 231-247 in the Starved Rock Reach and a second at RM 130 to 148 in the La Grange Reach, where no evidence of successful zebra mussel settlement (i.e. no live or dead zebra mussels or their

byssal threads attached to native mussels, rocks, woody debris, etc) were found. Secondly, during 1995, three densely populated sites (RM 37.8, 166.0, and 248.8) > 1000 m² of large zebra mussels (25-43 mm) showed no evidence of mortality. This indicated that the dieoff observed in 1994 was not as complete as previously believed. However, by October 1995 the population at RM 37.8 crashed to a mean density of 14 live zebra m².

Due to the persistence of source populations in Lake Michigan and the Upper Illinois River, future recolonization of the lower river seems likely. It is also possible that future generations of Illinois River zebra mussels may be more successful as they become more tolerant of fluctuations in water levels and poor water quality factors.

In a second study, from May 1994 through December 1995, zebra mussel veliger drift was monitored twice weekly at a single site on the Illinois River at Havana, Illinois (RM 121.1). Unlike adult populations, which exhibited high year-to-year variability, veligers showed a remarkable consistency in 1994 and 1995 in terms of total abundance and size distribution.

While the duration of spawning seasons differed in 1994 and 1995, total veliger abundance was estimated at 2.0×10^{14} and 2.0×10^{14} , respectively. The average veliger size was 109.6 micro gms in 1994 and 109.0 micro gms in 1995. Approximately 80% of veligers were between 95 and 135 micro gms for both years. The occurrence of distinct pulses of similar sized veligers drifting past the study site in both years indicated that veligers were being produced by distinct upriver populations rather than by a scattering of adults broadly distributed along the upper Illinois

River. This corresponds with previous findings of others.

In July 1995 veliger cohorts were followed as they drifted from RM 121.1 to RM 0 (the confluence of the Illinois and Mississippi Rivers). Estimated veliger growth rates were 6.72 micro gms/day. At this rate, veligers produced by the northernmost adult population (RM 249) would be likely to settle in the Illinois River only if they drifted at an average velocity of <0.3 m/sec. Veligers drifting at an average velocity of >0.3 m/sec and settling within the Illinois River are most likely to have been produced by source populations in upriver tributaries such as the Des Plaines and Kankakee Rivers, or Lake Michigan.

Contact: Dr. Richard Sparks, Illinois Natural History Survey, LTRMP Field Station, 704 N. Schrader Ave., Havana, IL 62644, (309) 543-6000, FAX (309) 543-2105

Congressional Moratorium Lifted on ESA Listings

The U.S. Fish and Wildlife Service (USFWS) announced on May 10 that endangered species can once again be added to the official List of Threatened and Endangered Wildlife. Mollie Beattie, USFWS director said that the following priority system has been established for resuming endangered species listings:

1. Emergency listings of species in imminent danger of extinction;
2. Processing final decisions on species already proposed for listing, with highest priority given to species facing high magnitude threats; and
3. All other listing actions, including processing reclassifications and delistings, new proposed listings, petition findings, and critical habitat designations.

The Service's backlog includes:

- 243 proposed species that await final listing decisions,
- 182 candidate species that await proposals for listing,
- pending court orders to designate critical habitat for 7 species, and
- unresolved petitions to list or delist 57 species.

In order to clear the backlog, approximately 100 Service biologists who had been reassigned during the moratorium must be brought back into the endangered species listing program and they must review the proposed listings to be sure the information is up-to-date.

Beattie said the listing funds available for FY 96 are not adequate to allow the USFWS to meet all of its immediate responsibilities and that, in view of the time required to bring personnel back into the program and the limited funding available, it is unlikely decisions can be reached on all 243 proposed species by the end of FY 96.

Beattie also said the Service will be working with the Justice Department to ensure that lawsuits do not drain all the agency's resources for listing vulnerable species. There are currently more than 60 pending cases that concern listing and 10 outstanding court orders or settlements that address listing activities. The Secretary of the Interior also has received several hundred notices of intent to sue under the ESA.

TNC Report on Status of Aquatic Species

The Nature Conservancy's (TNC) NatureServe program released a report entitled, "Troubled Waters: Aquatic Ecosystems at Risk," on April 29, stating that a silent crisis is brewing beneath the surface of our nation's waters. The report further states that freshwater aquatic animal species are the

most imperiled group of species in the U.S. At risk are: 67% of freshwater mussel species; 64% of crayfish species; 37% of freshwater fish species; and 29% of amphibian species.



The report is based on data provided by state agency-based Natural Heritage Programs, a national network of biological data centers which tracks the location and status of rare plants, animals, and natural communities. The NatureServe program is designed to raise awareness of biodiversity conservation by sharing widely TNC's scientific knowledge and expertise. The program seeks to give scientists, policy makers and land managers effective tools to plan conservation efforts.

According to the report, the highest concentrations of imperiled freshwater animal species are in the southeastern U.S. and in the arid West. For four states, including Alabama, Florida, Georgia and Tennessee, more than 15% of their aquatic and wetland animal species are considered rare or imperiled. Alabama's aquatic animal species are in greatest danger, with more than 22% of its native aquatic species at risk. For nine other states, including Kentucky, Arkansas, North Carolina, Texas, and California, at least 10% of their native aquatic species are at risk.

The southeastern U.S. is home to many rare species of freshwater fishes, and the world's richest

collection of freshwater bivalves (mussels) which have become extinct or endangered because of pollution, sedimentation, and damming and channelization of streams and rivers. Many of the West's freshwater species live in springs and rivers which are threatened by pollution, water diversion, and competition from non-native species.

The report cites four major reasons we should be concerned about the status of our aquatic species:

- stream-dwelling insects, mollusks, and crustaceans are indicators of environmental quality;
- aquatic and wetland species and natural communities provide environmental services and products that are important to humanity;
- undiscovered genetic and chemical compounds of aquatic species hold potential value for medical, agricultural, and industrial applications; and
- all living things are part of food chains; if changes in the supply and quality of water cause one species to die out, other living things become at risk.

The report also cites four major challenges to protecting aquatic species and natural communities:

- because watersheds and aquatic ecosystems are often very large, and aquatic species are affected by activities anywhere upstream in the watershed, aquatic species can be threatened by activities taking place even many miles away;
- resource use can conflict with aquatic habitat conservation objectives;
- despite laws and regulations designed to protect water quality, non-point source pollution -- such as the run-off of chemicals and soil from agricultural lands -- remains very difficult to control; and
- inventorying and monitoring aquatic species can be much more difficult than tracking land-based

species.

TNC argues that to meet the complex challenges of protecting aquatic ecosystems, conservation agencies must continue to develop innovative tools and programs -- especially through public/private partnerships -- which can address the varying conditions and challenges of different watersheds. The report provides eight case studies which showcase a variety of aquatic conservation efforts across the country -- including the use of new agricultural methods, water rights allocation, and improved livestock watering practices. The case studies illustrate creative ways public and private land owners can protect aquatic and wetland species.

EPA Pesticide Report

Pesticide use reached record highs in 1994 and 1995, reversing a downward trend, according to a USEPA report made public recently by the Natural Resources Defense Council (NRDC) and the US Public Interest Research Group (PIRG). The groups "complained" that pesticide use was up even as Congress was preparing to consider bills the groups said would loosen pesticide regulations.

The EPA report, which had been scheduled for release in six weeks, said 1.25 billion lbs. of herbicides, insecticides and fungicides were used in 1995. In 1994, 1.23 billion lbs. were used, up more than 100 million lbs. from 1993. NRDC said the EPA report contradicted "industry claims that it is successfully promoting reduced use" of the toxic chemicals. According to an NRDC statement, "Many of these chemicals are acutely or chronically toxic, cause cancer, birth defects, are endocrine disrupters and can cause severe adverse health and environmental impacts".

NRDC senior attorney Robert Kennedy said that current pesticide-use figures were double the amount used when Rachel Carson wrote "Silent Spring" in 1962. According to NRDC and PIRG, the EPA figures include only active ingredients, and not inert ingredients "such as petroleum, benzene and other toxic compounds, [which] can comprise [more than] 50% of the volume of formulated pesticides". The EPA confirmed the numbers' accuracy.

But the American Crop Protection Association (ACPA), the pesticide industry's trade association, said the report was misleading. It said overall pesticide use was up because more land was in production, while pesticide use per acre continued to decline. ACPA President Jay Vroom said, "Indeed, this pattern of decline has become evident as new products requiring lower application rates have come on the market, and as use of integrated pest management plans have grown".

NRDC and PIRG criticized two bills Congress may consider in June, both of which they said would repeal the Delaney Clause prohibiting cancer-causing chemicals in processed foods. They said the bills would preempt states from taking stronger measures than feds, including expanded right-to-know and reporting rules.

Source: Greenwire Vol. 6, No. 20

Land and Water Conservation Funds Diverted

The Land and Water Conservation Fund (LWCF), created in 1964, to purchase private lands for use as national parks and preserves is being "siphoned away with almost no public awareness.".

The LWCF takes in \$900 million a year from offshore oil drilling royalties and is the largest source

of federal funding for buying scenic lands. But since the early 1980s, Congress has routinely diverted most of the fund's revenues for other purposes. Only \$138 million is set aside from the fund this year for parks. "As a result, logging, mining and housing development are occurring on private lands within some of America's most sensitive wild areas."

This year, Congress has eliminated all state grants under the fund, and announced plans to end the state grants program entirely starting next year. Since most of the public does not even know the fund exists, "there has been no real outcry."

Conservatives are split on the merits of the fund. Some Western GOPers have argued that the federal government already owns too much land. Others say that upkeeping the current staple of parks is a more important priority. Yet, some conservative, free-market groups support the fund, saying more money is needed to compensate private landowners who cannot develop, log, or mine their land because of the presence of endangered species.

Interior Secretary Bruce Babbitt on May 8 said he is working on a proposal to take the fund "off budget" so a full \$1 billion can be spent on parks each year.

Source: Greenwire Vol. 6, No. 11

Arkansas River Water Issues

Colorado farmers this spring are "facing higher costs and more uncertainty" after the state issued new rules designed to stop overuse of Arkansas River water. The rules are in response to a 1995 U.S. Supreme Court ruling that found the state violated the 1949 Arkansas River Compact -- which divides the river's water between Colorado and Kansas by

illegally diverting water from the river.

Both states have met with court appointed officials to determine what damages, either in money or water, Colorado must pay to Kansas. The final settlement may not be decided until 1997. Kansas would like to be paid in cash, while Colorado is pushing to pay with water.

If Colorado is allowed to pay with water, it must buy water rights, a move that could lead to more dry land in the Arkansas River Valley. According to Jody Grantham of the Colorado state engineer's office, "Some of the ways of paying Kansas back certainly will be through [drying up irrigated land.] ... It's going to put a lot of pressure on that valley".

Source: Greenwire Vol. 6, No. 5

Wisconsin Tribal Water Issues

Wisconsin on May 10 filed a lawsuit challenging the USEPA's decision to grant the Lac du Flambeau band of Chippewa Indians the right to set its own water-quality standards. The EPA on January 26 approved a petition from the tribe, which was seeking status as a state under the federal Clean Water Act in order to set water-quality standards for those waters that are located in or flow through the reservation's borders.

Wisconsin Attorney General James Doyle contends that EPA's decision to confer standard-setting authority to the tribe deprived Wisconsin of its exclusive sovereignty over state waters. Moreover, federal law only allows EPA to give tribes standing as states on matters related to Clean Water Act enforcement. Such state standing is conferred on a tribe only when it has its own government, enforcement mechanisms and title to the local water resources.

The Chippewa band's 1854 treaty does not grant the tribe sovereignty over navigable waters, according to Doyle, who "said there is no formal hearing process or other way to challenge the EPA's decision".

Source: Greenwire Vol. 6, No. 10

Texas and Pennsylvania Stream Water Quality

On March 27 the USEPA rejected Texas's request to lower its water quality standards for most east Texas streams, citing the chance that the proposed changes could harm the environment and not meet federal Clean Water Act requirements. Jane Saginaw, EPA regional administrator in Dallas, said that the Texas Natural Resource Conservation Commission's proposal to downgrade thousands of streams in East Texas to "immediate" quality aquatic habitat status was not backed by adequate science.

The change in status would have relaxed pollution standards for cities and industries. Texas environmental officials disagreed with the ruling, but enviros -- who asked the USEPA to block the plan -- saw it as a victory.

In the meantime in Pennsylvania because the Department of Environmental Protection (DEP) had allowed that state's lakes and rivers to grow increasingly more polluted, U.S. District Judge Louis Bechtle on April 17 ordered the USEPA to rewrite Pennsylvania water quality laws within 30 days. The ruling stemmed from a suit filed by the Raymond Proffitt Foundation, an environmental group. The group argued that since Pennsylvania's water pollution standards had fallen below those mandated by the federal Clean Water Act, the USEPA must issue new laws for the state.

The ruling "could have a broad

economic impact on developers, industries and municipalities that want to discharge wastewater in state waterways." It could result in many Pennsylvania rivers and streams being reclassified as "high quality," a rating that imposes stricter controls on the discharge of pollutants into waterways. Such a reclassification could prove costly to emitters.

DEP and USEPA officials are currently working to recommend such a reclassification. The EPA has estimated in the past that the proposed change could affect as much as 85% of the state's rivers and streams.

Sources: Greenwire Vol. 5, No. 223, 238, and 240

Livestock Waste Legislation

Illinois Governor Jim Edgar (R) on May 21 signed a "comprehensive" package of livestock regulations aimed at preventing water pollution from manure runoff. The measures were negotiated by a coalition of farm and enviro groups in conjunction with state agencies.



The new law establishes a registration and inspection procedure for new manure lagoons, and requires all commercial-size livestock operations to have a manager trained in waste-handling techniques. Effective immediately, new or expanded livestock farms with up to 7,000 cattle or 17,500 hogs will have to be set back one mile from populated areas and a training program must be implemented for livestock producers. The Illinois Department of Agriculture gained authority under the law to inspect

lagoons, monitor waste management plans and set up training.

But the parts of the bill addressing lagoon certification, registration and standards will be part of the rule-making process, involving a multi-agency committee and a series of public hearings. That process could push into 1997. Ellen Hankes of the Illinois Pork Producers said the new law will not impose too big a burden on producers. But Lynne Padovan of the Illinois Environmental Council said the enviro lobby would like to see the legislation strengthened in rule-making.

In the meantime in Iowa, the Senate on April 1 approved a bill that would eliminate special protection from nuisance lawsuits for livestock producers that have violated enviro laws three or more times in five years. However, tougher livestock regulation bills in Iowa "appear to be dead for the year".

Source: Greenwire Vol. 5, No. 229 and Vol. 6, No. 18

Forestry Association Adds Muscle to Its Principles

In 1994, the American Forestry and Paper Association (AFPA) adopted the *Sustainable Forestry Initiative Principles and Guidelines*. Starting this year, the association requires its more than 400 corporate and organizational members to comply with these guidelines as a condition of membership. Members account for 84% of the paper production, 50% of the solid wood production, and 90% of the industrial forestland in the United States. All must adhere to performance measures on their own lands and promote sustainable forestry on other private and public lands.

Besides strongly encouraging overall forest health, ecosystem

management, and public involvement, the guidelines contain several objectives and performance measures that specifically address water resources. One set of measures prescribes meeting or exceeding all Best Management Practices, all applicable state water quality laws and regulations, and the requirements of the Clean Water Act for forestland.

Members will have to establish riparian protection for all perennial streams and lakes and contribute funding for water quality research. Clear-cutting will be better managed, with size limitations and a "green up" requirement forbidding clear-cutting until adjacent areas have regrown. AFPA members also encourage good stewardship of all forestland by working with other landowners, contractors, and loggers—primarily by their support for education and training. Some members have even gone beyond this measure with programs like Champion Industry's "preferred supplier program," which purchases timber from loggers who have completed special training courses, according to Champion's Paul Krick.

AFPA's sustainable forestry initiative sets out specific reporting requirements to measure members' compliance, and the organization itself will issue an annual report reviewed by an independent expert review panel.

Contact: Rick Cantrell, AF&PA, 1111 19th St. NW, Washington, DC 20036, (202) 463-2432; Fax: (202) 463-2708

Source: Nonpoint Source News Notes, April/May 1996, Issue 44

Corporations Restore Riparian Areas

As members of the Wildlife Habitat Council (WHC), more than 100 corporations are now

collaboratively managing over 340,000 acres of open space. The nonprofit WHC, created in 1988, encourages corporations to protect the environmental values of their lands and enhance them as wildlife habitats. So far, most WHC members are involved in upland habitat improvement projects, but some are also interested in the Waterways for Wildlife program that emphasizes riparian areas and wetlands.



Last year, Detroit Edison gave WHC a grant to coordinate the development of a management plan for the St. Clair River ecosystem shared by Michigan and Ontario. The plan will involve corporate, private, and public landowners in wetland, riparian, and upland habitat restoration projects.

Habitat enhancement is especially important to ecosystem or watershed-based approaches, say WHC representatives, because habitat affects water quality and biotic integrity. Another example of Waterways for Wildlife is the Cooper River Corridor Project in South Carolina, underway since 1993. Participation in the project, which is being led by Amoco Corporation, has ballooned to include 43 public, private, and corporate landowners working to improve water quality and enhance biodiversity on 70,000 acres along the river.

Currently, WHC says, 15 industrialized rivers bordered by

450 square miles of wildlife habitat are targeted for corporate collaboration on restoration or enhancement projects in the next five years. WHC gives special awards for Rookie of the Year and Corporate Habitat of the Year.

General Electric's Burkville, Alabama plant and DuPont's Victoria, Texas plant won 1995 WHC awards for stewardship. In addition, any WHC member companies who make a documented commitment to wildlife enhancement or environmental education are eligible for certification.

Contact: WHC, 1010 Wayne Ave, Suite 920, Silver Spring, MD 20910, (301) 588-8941, e-mail: whc@cais.com

Source: Nonpoint Source News Notes, April/May 1996, Issue 44

Cattlemen's Association Recognizes Good Stewards

Seven cattle producers won regional environmental stewardship awards in 1995 in the fifth annual recognition of good environmental stewardship sponsored by the National Cattlemen's Association (NCA) in partnership with Pfizer Animal Health. Much of the award-winning work used innovative methods to protect water resources while making businesses more profitable.

- The owners of Sitz Angus Ranch near Harrison, Montana, won an NCA regional award for helping the state improve an important trout-spawning area. They also diverted a creek that ran through their feedlot back to its original course to avoid contamination. They limit cattle access to the stream and have planted thousands of trees and shrubs along streambanks.

- Maryland's Antietam Meadows Farms near Sharpsburg, Maryland,

set an example for Chesapeake Bay producers with their commitment to water quality. Antietam Meadows cattle drink only from troughs-never directly from the nearby Potomac River-to ensure the integrity of the river's banks. The Poffenbergers, who manage the farm, have created a riparian buffer zone and turned 125 acres of tilled, highly erodible cropland into productive permanent pasture, eliminating nearly all erosion on their farm.

• The Mortenson family of Pierre, South Dakota, used a managed grazing system, among other things, to reduce soil erosion from runoff and increase the ranch's scarce water supply. Forage production has increased eightfold. "We've been able to improve the condition of the rangelands because we've managed the soil and water," said Clarence Mortenson.

Other regional winners were G.W. Jones and Sons Farm, Huntsville, Alabama; David Williams Farm, Vilisca, Iowa; and Babbitt Ranches, Flagstaff, Arizona. All seven winners were selected by a panel of experts, including representatives of the U.S. EPA, American Farmland Trust, Natural Resources Conservation Service, The Nature Conservancy, Texas Tech University, South Utah State University, Texas Agricultural Extension, NCA, and Pfizer Animal Health.

The Heritage Beef Cattle Company of Wheeler, Texas, won the national NCA Stewardship Award in January 1996.

Contact: Jamie Kaestner or Wendy Radakovich, National Cattlemen's Association, 5420 S. Quebec St., PO. Box 3469, Englewood, CO 80155, (303) 694-0305.

Source: Nonpoint Source News Notes, April/May 1996, Issue 44

Organization Promotes On-Farm Environmental Protection

Foundation E.A.R.T.H., a new organization that takes its name from its mission-Earth, Agriculture, Research, and Technology in Harmony is a nonprofit partnership of farmers and others dedicated to protecting the environment by supporting the adoption of technologically advanced, environmentally sound farming practices.

Formed only a year ago, Foundation E.A.R.T.H. revolves around the Harmony Farms Program. "If we can provide hard evidence of agriculture's environmentally responsible approach, we can begin to increase the public understanding of, and confidence in, food production," say the foundation's charter members. To yield that evidence, the program will depend on three types of projects:

- "Demonstration Farms" open to a wide range of invited groups will provide the why and how of environmentally friendly farming practices;
- "Development Farms" operated by farmers who work actively with established agronomic advisory groups will develop, manage, and monitor new technologies and farming practices; and
- "Self-Audit Farms," which may be any agricultural operation in the country that is willing to carry out a yearly environmental audit reassessing their farming practices in crucial areas.

Contact: Foundation E.A.R.T.H., 676 St. Clair, Suite 2000, Chicago, IL 60611

Source: Nonpoint Source News Notes, April/May 1996, Issue 44

Sediment/Nutrient Removal with Vegetated and Riparian Buffers

A study was initiated in 1990 to provide quantitative data on the effectiveness of vegetative buffers on removing sediment and nutrients as influenced by (1) soil and geomorphic conditions; (2) type of vegetation; and (3) hydrologic features of the site and runoff events. Two sites were chosen for the study - one in the Piedmont, the other in the Coastal Plain of North Carolina. At each site, an agricultural field was divided into six source areas: two were representative of the surface water flow, sediment, and chemical movement. The other four areas drained to grass buffers.

Two of the grass buffers were 14 feet wide; two were 28 feet wide and runoff from the field edges was dispersed at the top of two riparian plots. During a storm event, multiple samples were taken (up to 24) based on the runoff flow rate from the plots. Samples were analyzed for sediment and nutrient content, then matched with flow rates from the runoff to determine the flow-weighted average concentrations along with mass losses of sediment and nutrients.

A number of parameters had to be considered: surface conditions, including vegetative cover, land slope, and topography; and soil types. Data were collected for more than 50 storms in the Piedmont, and more than 60 in the Coastal Plain - all dealing with runoff hydrographs and sediment concentrations. Nutrient concentrations were analyzed for more than 25 storms.

None of the storm events have so far been large enough to inundate the grass buffers. On small rainfalls (one or two inches), no runoff resulted from the downslope edge of the grass buffers. Runoff through the

shorter, 14-foot buffers was reduced by nearly 80%; sediment was also generally reduced by 80% or more; and more than 50% of the sediment-bound nutrients were filtered by the grass buffers. Little or no runoff was measured during many of these events in the 28-foot buffers.

Runoff did occur on both lengths of grass buffers during larger storms (greater than two inches), but less in general from the 28 foot buffers. Sediment yield was less from the longer buffer length. The riparian buffers reduced both sediment and nutrients over levels measured in the field. The riparian buffers at the Piedmont site were forested and relatively steep so the flow tended to channelize during larger storms, resulting in little or no runoff reduction.

The Coastal Plain riparian buffer had a smaller slope and showed similar trends. This buffer was dominated by dog fennel, which offered little resistance to flow in summer and disappeared during the winter months. Even so, more than 50% of the sediment was removed during most storms and removal of nutrients in the runoff was almost as high.

Contact: J.E. Parsons,
Department of Biological and
Agricultural Engineering, North
Carolina State University Raleigh,
NC 27695-7619, (919) 515-
6750, Fax: (919) 515-7760

Ecolotree Stream Buffer/Cash Crop

Louis Licht at the University of Iowa has developed a riparian buffer consisting of poplar trees that will reduce sedimentation and nutrient loading to a stream. A valuable commodity crop, the poplars can be harvested after five years as a cash crop for paper, construction material, or fuel.

Licht began his research in 1986 on the ability of hybrid poplar (*Populus spp.*) riparian buffers to remove nutrients from runoff. In 1991, with funding from the USDA Forest Service, the Center for Global and Regional Environmental Research, the University of Iowa, and the USEPA, Licht began a paired watershed study at Amana Farms (IA).

Licht trademarked the design used in his research, calling it the *Ecolotree Buffer*, to differentiate it from Natural Resources Conservation Service's grass or mixed-tree buffers.

The 1991 Amana Farms study compared two watersheds draining to a first-order stream. Watershed 1 was 103 acres, including 80 acres of cropland, and did not have a buffer along the stream. Watershed 3 was 283 acres, including 174 acres of cropland, and had a four-row riparian buffer with 15,000 poplar trees on each side of the stream. Native prairie species were planted in the understory of the buffers, and annual grasses and weeds were managed by mowing.

Measurements of sediment and nitrate nitrogen concentrations in runoff from both watersheds revealed the benefits of the riparian buffer. Sediment concentration in runoff measured during rain events was 647% greater from Watershed 1 than Watershed 3. Soil loss per row-cropped acre topped off at 3,408 lbs. in Watershed 1, in comparison to a 568 lb. loss from Watershed 3.

Testing of in-stream nitrate nitrogen revealed that only the unbuffered segment had nitrate concentrations in excess of the Maximum Contaminant Limit (10 mg/L) established by EPA. Nitrate nitrogen concentration in runoff was 69% less in Watershed 3.

Because the riparian buffers are

designed as borders that follow the contour of the land and adjacent stream, they also provide a valuable edge-type habitat for wildlife. As perennials, the poplars develop into a more mature ecosystem than annual crops. Licht says the buffer can "develop soil structure, deep plant root systems, dense surface stem structure, and a diversity of life."

"The *Ecolotree Buffer* design makes it possible for farmers to grow a new commodity crop from perennial plants that require few pesticides, scavenge excess nutrients, and stabilize eroding soils," Licht explains. "It serves as a final filter for air, water, and soil between built and natural ecosystems." In addition, the buffer allows farmers to diversify from food commodities into other economic markets, including the energy/fuel commodity market.

Contact: Louis A. Licht, P.E., Associate Research Scientist, A 102 Oakdale Hall, Technology Innovation Center, Iowa City IA 52319

Environmental/Economic Balance

Sixty-six percent of Americans believe that environmental protection, economic growth and the health and happiness of communities can be achieved simultaneously, according to a nationwide poll by the Roper Research firm released on April 16.

Sixty-six percent of poll respondents also say healthy air and water is extremely important to a community, and 60% say they are extremely or very satisfied with the air and water quality in their own community. The poll also found about 23% of Americans defining a "New American Dream" that differs from the traditional one by focusing less on economic achievements like home and car

ownership, and more on grassroots involvement in local enviro, education and social welfare efforts.

The poll, commissioned by S.C. Johnson & Son, Inc., claims to be the first to measure American attitudes and actions toward sustainable development, "defined as meeting the needs of the present without compromising the needs of future generations." The survey is based on face-to-face interviews with 1,002 adults from September 30, 1995 to October 11, 1995.

Can these three goals -- Economic Growth, Environmental Protection and the Health and Happiness of People -- be reached together, or must we choose one over the others?

Can be reached together	66%
Must choose one over others	22
Don't know	12

When these three goals come into conflict, which do you think is more important?

Health and happiness of people	54%
Economic growth	14
Environmental protection	11
Depends on situation/issue	16
Don't know	5

How much effort should we be making now to improve the quality of our environment?

Major effort	62%
Some effort	33
No effort	3

How much effort should we be making now to reduce the use of chemicals?

Major effort	48%
Some effort	43
No effort	7

Do you think the following will be a serious problem for your children or grandchildren 25 to 50 years from now? -- Yes

Congestion of cities and highways	81%
Overpopulation	76
Severe air pollution	74

Severe water pollution	73
Health problems caused by man-made chemicals	73
Shortage of energy supplies	60

Source: Greenwire Vol. 5, No. 236

Conservation Plan Signed

Seven Cabinet-level agencies recently signed an unprecedented Recreational Fishery Resources Conservation Plan. The plan was required by President Clinton's Executive Order 12962, aimed at boosting recreational fisheries, signed and issued during National Fishing Week last year. Participating agencies include Interior, Commerce, Agriculture, Defense, Energy, and Transportation and the Environmental Protection Agency.

The conservation plan recognizes the vital role recreational fisheries play in the social, cultural, and economic well-being of American society. It calls for increasing recreational fishing opportunities nationwide by strengthening efforts to conserve, restore, and enhance aquatic systems. The conservation plan outlines strategies the seven signatory Federal agencies will pursue over the next 5 years to improve recreational fisheries within the context of their programs and responsibilities.

By the end of this year, each agency will develop a specific plan detailing actions to meet the goals of the conservation plan. Signatory agencies will design strategies to improve fisheries and their habitats and increase angling opportunities and access on Federal lands. To support these goals, the plan calls for increasing partnerships among Federal, State, Tribal, and private organizations and expanding efforts to educate the public about the value and need for healthy aquatic resources.

The plan includes "success indicators" to measure agency achievements in meeting the plan's goals. For example, Federal agencies will annually report how many areas were opened to angling use, how many new boat ramps or fishing piers were constructed, how many angler education programs were conducted, how many river miles supporting recreational fisheries were restored or enhanced, or the effectiveness of their partnership efforts.

Based on the agencies' annual reports, the plan's effectiveness will be evaluated each year by the National Recreational Fisheries Coordination Council and the Sport Fishing and Boating Partnership Council. The former, co-chaired by the Secretaries of Interior and Commerce, is made up of representatives of the Departments participating in the conservation plan. The latter is a Federally chartered advisory panel made up of sportfishing and boating advocates from the private sector and state agencies which advises the Interior Secretary on fishing and boating issues. The councils' responsibilities for reviewing the plan's success also were established under President Clinton's Executive Order on Recreational Fisheries.

Copies of the Recreational Fishery Resources Conservation Plan are available from the U.S. Fish and Wildlife Service's Publications Unit, 4040 North Fairfax Drive, Room 130, Arlington, Virginia, 22203, (703) 358-1711

Rhine River Cleanup

In 1987, Rhine River nations banded together to save the waterway, which then was heavily polluted with mercury, cadmium and sludge. Today, that drive appears to be a "spectacular victory" and the Rhine's "fortunes have undergone a dramatic

change."

The cleanup organized by France, Germany, Luxembourg, the Netherlands and Switzerland has met most of its goals. Lead, mercury and dioxin levels have been cut by 70%, while levels of chrome, nickel and heavy metals have dropped 50%.

Meanwhile, tighter industrial controls and modern waste treatment plants have made treated river water safe to drink again. The rising influence of the European Greens has also led government and business to take "more ambitious steps."

Chemical companies up and down the Rhine -- including Hoechst, Ciba-Geigy, Bayer and BASF -- are pouring hundreds of millions of dollars into research centers to find new ways to protect the river. That work has led to the "resurrection" of Rhine salmon: A

group of French biologists in November found that salmon and sea trout had returned to the upper Rhine for the first time in 50 years.

The salmon now seem "poised" for a comeback, with many nations spending big money to clean spawning grounds and build fish ladders on hydroelectric dams. Still, nitrogen and phosphorous concentrations remain high due to fertilizer and pesticide runoff from farms.

Source: Greenwire Vol. 5, No. 222

Skin Cancer in Fish

Researchers have found a new breed of fish in Australian oases, "but many of the fish suffer from skin cancers scientists believe are caused by the Earth's thinning ozone layer." The new species,

called the murgunda, is a three-inch long fish that dwells in shallow oases in Australia's desert outback.

According to the South Australian Research and Development Institute (SARDI), which discovered the fish, some 500 to 1,000 of the 8,000 member murgunda population had contracted sun-induced skin cancer.

Bryan Pierce of SARDI believes that various factors suggest that excessive ultraviolet light penetrating through the thinned ozone layer is responsible for the cancers. The cancers are unlikely to be genetic because the offspring of cancerous murgundas were normal. Also, those fish living in shady areas tend not to develop cancer.

Source: Greenwire Vol. 6, No. 18.

Meetings of Interest

July 9-12: Wetlands '96; Forming Fair and Effective Partnerships and Workshop on Wetland, Floodplain and River Online Services and GIS Applications, Washington, DC. Contact: Association of State Wetland Managers, (518) 872-1804.

July 10-12: GREEN Conference of the Americas: Educating for Sustainable Watersheds, Ann Arbor, MI. Contact: Global Rivers Environmental Education Network. (313) 761-8142

July 14-17: Watershed Restoration Management: Physical, Chemical and Biological Considerations, Hotel Syracuse, NY. Contact: American Water Resources Association, (703) 904-1225.

July 15-19: River Morphology and Applications, Inn at the Pass Conference Center, Pagosa Springs, CO. Contact: Wildland Hydrology, (970) 264-7120.

August 3-7: Fifth National Volunteer Environmental Monitoring Conference, University of Wisconsin-Madison, WI. Contact: Celeste Moen, Wisconsin Self-Help Lake Monitoring Program. (608) 264-8878.

August 13-16: The DELTA: Connecting Points of View for Sustainable Natural Resources. Cook Convention Center, Memphis, TN. Contact: National Association of Conservation Districts, Delta Conference, 509 Capitol Court, NE, Washington, DC 20002, (202) 547-NACD.

August 15-19: International Conference on Wetland Systems for Water Pollution Control, Vienna, Austria. Contact: ICWS, Vienna 1996, Attn: Mrs. Eva Brauman, Nussdorfer Laende 11, A-1190, Vienna Austria.

September 22-28: INTECOL V International Wetlands Conference, University of Western Australia, Perth. Contact: UWA Extension Conference and Seminar Management, University of Western Australia, Nedlands, Perth 6907; 619 380-2433; FAX 619 380-1066; e-mail: uwext~uniwa.uwa.edu.au

October 23-26: 23rd Annual Natural Areas Conference and 15th North American Prairie Conference, Pheasant Run Resort

and Conference Center, St. Charles, IL. Contact Karl Becker, (217) 785-8774.

July 1997, III International

Symposium on Sturgeon, ENEL Training Centre, Piacenza, Italy. Contact: Dr. P. Bronzi, ENEL spa - CRAM via Monfalcone, 15 - 20132 Milan (Italy) phone: + + 39-

2 - 72243412 or 3452, FAX: + + 39 - 2 - 72243496, E-mail: bronzi@cram.enel.it.

Congressional Action Pertinent to the Mississippi River Basin

Agriculture

P.L. 104-127, the Agricultural Improvement and Reform Act of 1996 (the Farm Bill) signed into law by President Clinton on April 4.

Fish & Wildlife

House on April 23 passed H.R. 160 to authorize appropriations to carry out the Interjurisdictional Fisheries Act of 1986 and the Anadromous Fish Conservation Act by a vote of 406 yeas.

Forests

S. 1590 (Murray, D/WA) "Public Participation in Timber Salvage Act of 1996" to repeal the emergency timber salvage sale program and for other purposes.

S. 1595 (Bradley, D/NJ) "Restoration of Natural Resources Laws on the Public Lands Act of 1996" to repeal the emergency timber salvage sale program.

S. 1647 (Pressler, R/SD) to amend the Forest Land Policy and Management Act to provide that forest management activities shall be subject to initial judicial review only in the United States district court for the district in which the affected land is located.

H.R. 1089 (Cremeans, R/OH) ensures that acquisition of lands for inclusion in the National Forest System does not result in a loss of tax revenue to the affected county.

H.R. 1439 (Metcalf, R/WA) amends the National Forest

Management Act of 1976 to require that the Forest Service timber sale program be financed only by receipts from the sale of timber under the program.

Government Affairs

S. 1001 (Glenn, D/OH) reforms the regulatory process, providing for cost-benefit analysis risk assessment of major rules, and calls for a review of existing rules.

H.R. 2500, (Michael Oxley R/OH) amends the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

H.R. 2827 (Saxton R/NJ) consolidates and improves governmental environmental research by organizing a National Institute for the Environment.

H.R. 3048 (Edwing, R/IL), "Regulatory Flexibility Amendments Act of 1996."

H.R. 3093 (Franks, R/CT) to amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to establish a brownfield cleanup loan program.

H.R. 3105 (Wolf, R/VA) to amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to exempt certain state and local redevelopment boards or commissions, and fresh start users of facilities purchased from those boards or commissions, from the liability under that act.

H.R. 3214 (Franks, R/CT), to

amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to establish a brownfield cleanup loan program.

Grazing

The House Resources Committee on April 25th approved a Republican-sponsored bill to overhaul federal grazing policy. The measure would raise grazing fees by 37% to \$1.85 per animal unit month and give ranchers "greater say" in managing some 260 million acres of federal rangeland in the West. The bill now awaits House floor action. A similar Senate version was approved on March 21st.

Mining

S. 504 (Bumpers, D/AR) amends the Mining Law of 1872, imposing a royalty on mineral operations and reforming the process for mineral development.

S. 506 (Craig, R/ID) amends the Mining Law of 1872 imposing a royalty on mineral operations and reforming the process for mineral development.

S. 639 (Campbell, R/CO) amends and reforms the Mining Law of 1872 providing for the disposition of locatable minerals on federal lands.

Parks

S. 695, Senate Energy Committee panel held a hearing to provide for the establishment of the Tallgrass Prairie National Preserve in KS.

S. 964 (Johnston, D/LA) amends the Land and Water Conservation Fund Act of 1965 giving the Interior Secretary authority to collect entrance fees at National Parks for direct use on priority park maintenance and repair projects.

S. 1695 (McCain, R/AZ) authorizes the Secretary of Interior to assess up to \$2 per person visiting the Grand Canyon or other national parks to secure bonds for capital improvements to the park.

H.R. 260 (Hefley, R/CO) provides for a plan and management review of the National Park System, and reforms the process for considering additions to the system.

H.R. 1449 (Roberts, R/KS) provides for establishment of the Tallgrass Prairie National Preserve in Kansas.

H.R. 1846 (Richardson, D/NM) establishes the Yellowstone Headwaters National Recreation Area within Montana's Gallatin and Custer National Forests

H.R. 3317 (Williams D/MT) to establish the Yellowstone River Valley Heritage Area in Montana, North Dakota, and Wyoming.

H.R. 3318 (Williams, D/MT) to establish the Southwest Montana Heritage and Recreation Area in the state of Montana.

Public Lands

S. 93 (Hatfield, R/OR) amends the Federal Land Policy and Management Act providing for ecosystem management on public lands. Referred January 4 to Committee on Energy and Natural Resources.

S. 518 (Thomas, R/WY) limits federal acquisitions in states where 25% or more of the land is owned by the United States.

H.R. 2107 (Hansen, R/UT) amends the Land and Water Conservation Fund Act of 1965 to improve the quality of visitor services provided by federal land management agencies through an incentive based recreation fee program.

H.R. 3198 (Calvert, R/CA) to reauthorize and amend the National Geologic Mapping Act of 1992, and for other purposes.

House Resources Committee panel on national parks, forest and lands on March 21 held an oversight hearing on federal lands and regulation of private property.

Recreation

H.R. 104 (Emerson, R/MO) rescinds fees required for use of public recreation areas at lakes and reservoirs under jurisdiction of the Army Corps of Engineers.

Refuges

H.R. 91 (Sensenbrenner, R/WI) prohibits land or water acquisition for the National Wildlife Refuge System if wildlife refuge revenue sharing payments have not been made for the preceding year.

S. 1013 (Conrad, D/ND) authorizes the Interior Secretary to acquire land for the purpose of exchange for privately held land for use as wildlife and wetland protection areas.

H.R. 1112 (Brewster, R/OK) and S. 976 (Nickles, R/OK) transfers the Tishomingo National Wildlife Refuge to the state of Oklahoma. House Resources Committee held a hearing on H.R. 1112 on May 9.

H.R. 1675 (Young, R/AK) improves management and establishes purposes of the National Wildlife Refuge System. House on April 24 passed by a 287-138 vote.

H.R. 2679 (Barrett, R/NB) revises

the boundaries of the North Platte National Wildlife Refuge

Executive Order 12996 issued by President Clinton on March 25 outlining the mission and purposes of the National Wildlife Refuge System (3/28 Federal Register, p. 13657).

Rivers

H.R. 1260 (Johnson, D/SD) ensures equity in and increased recreation and economic benefits from the Missouri River system.

H.R. 1331 (Furse, R/OR) creates a voluntary non-regulatory technical assistance and grants program within the Natural Resource Conservation Service's existing Small Watershed Program.

H.R. 2939 (Gunderson, R/WI) provides for a Congressionally authorized test of the Mississippi Interstate Cooperative Resource Agreement in the Mississippi River Basin. Resource Committee held a hearing on May 9.

Takings

S. 135 (Hatch, R/UT) establishes a uniform federal process for protecting private property rights.

S. 145 (Gramm, R/TX) provides for protection of private property rights.

S. 605 establishes a uniform system for protecting property rights and compensating landowners adversely affected by regulations. Approved for floor action on Dec. 21.

H.R. 9 (Archer, R/TX) creates jobs, enhances wages, strengthens private property rights and reduces the power of the federal government.

H.R. 971 (Wyden, D/OR) ensures that homeowners have access to information and opportunities to comment on actions that may decrease home values, and

establishes a compensation program for development that produces pollution or otherwise impacts home values.

Water and Wetlands

S. 626 (Hatfield, R/OR) amends the Watershed Protection and Flood Prevention Act establishing a technical assistance and grant program for waterways restoration.

S. 639 (Warner, R/VA) authorizes civil works programs for the Army Corps of Engineers which preserves the navigation of channels and harbors and provides for flood control and storm damage reduction.

S. 1601 (Levin, (D/MI) to amend the Federal Water Pollution Control Act to extend the deadline for and clarify the contents of the Great Lakes health research report, and for other purposes.

S. 1620 (Lautenberg, D/NJ) amends the Water Resources Development Act of 1986 to provide for the construction, operation, and maintenance of dredged materials.

S. 1660 (Glenn, D/OH) to provide for ballast water management to prevent the introduction and spread of nonindigenous species into the waters of the United States, and for other purposes.

H.R. 198 (Smith, R/MI) amends the Food Security Act of 1985 permitting conversion of wetlands smaller than one acre in size.

H.R. 961 (Shuster, R/PA) reforms and reauthorizes the Clean Water Act. Passed the House May 16, 1995.

H.R. 1132 (Oberstar, D/MN) amends the Clean Water Act providing for improved non-point source pollution control.

H.R. 1262 (Pallone, D/NJ) amends the Clean Water Act improving enforcement and compliance programs.

H.R. 1268 (English, R/PA) establishes a comprehensive program for conserving and managing wetlands.

H.R. 1438 (Lowey, D/NY) amends the Clean Water Act to provide funding to the states for estuary conservation.

H.R. 2940 (Hayes R/LA) entitled "Deepwater Port Modernization Act."

H.R. 3112 (Pallone, D/NJ) to amend the Water Resources Development Act of 1992 relating to sediments decontamination technology.

H.R. 3113 (Pallone, D/NJ) to amend the Water Resources Development Act of 1986 relating to cost sharing for creation of dredged material disposal areas, and for other purposes.

H.R. 3152 (Baker, R/CA) "Wetland Creation and Improvement Act."

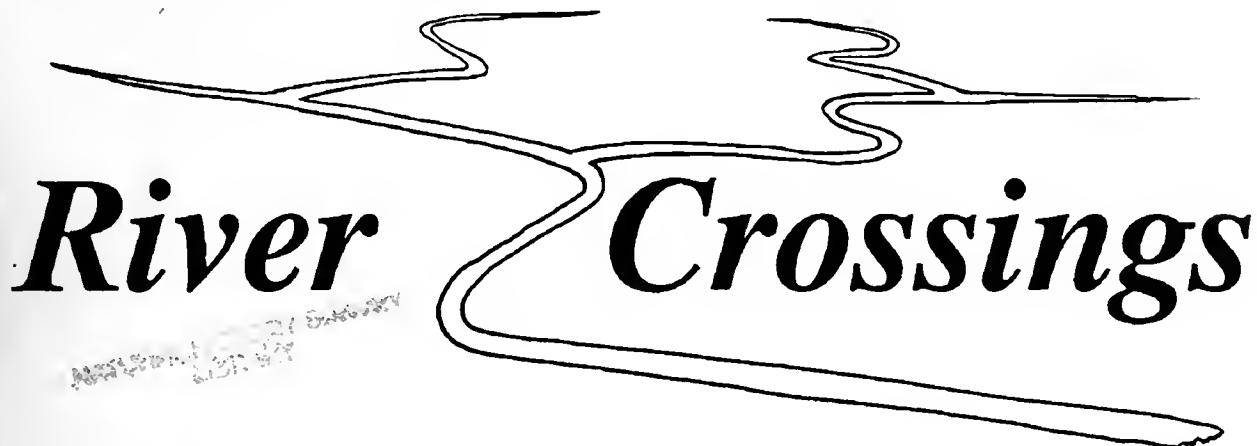
H.R. 3217 (LaTourette, R/OH) to provide for ballast water management to prevent the introduction and spread of nonindigenous species into the waters of the United States, and for other purposes.

Source: Land Letter, Vol. 14, Nos. 17, 20, 24, 33 and Vol. 15, No. 2, 6, 11 and 14; and NOAA Legislative Informer, September 1995, Issue #15



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River Crossings

Volume 5

July/August 1996

Number 4

Paddlefish Movements Being Documented

One of the first recorded cases of Mississippi River paddlefish migrating up a tributary river to spawn in Iowa was recently documented by Gary Siegwarth and John Pitlo (Iowa Dept. of Natural Resources).



"paddlefish"

with radio transmitters to verify spawning sites. Biologists hoped to not only document this stretch of the river as a paddlefish spawning area, but also to determine if these fish were part of a resident Cedar River paddlefish population or migrants from the Mississippi River.

"The paddlefish remained close to Palisades-Kepler State Park until mid-June," Siegwarth said, "and then we could no longer locate them by boat. An aerial search was set-up through the Civil Air Patrol in Dubuque to find the fish

on the lower river. The search began below the roller dam at Cedar Rapids and continued down the Cedar River to where it meets the Mississippi below Lake Odessa."

"Just when it seemed the fish had simply disappeared," Siegwarth continued, "a radio signal from the female was picked up on the Mississippi, three miles below the mouth of the Cedar River and more than 100 river miles below Palisades Park. This fish had migrated all the way back to the Mississippi in only a couple of

"This finding illustrates the vital role of interior rivers to Mississippi River fish populations," Siegwarth said. "It also indicates that in the days before the dams, tributary rivers served as significant 'highways' for fish populations moving to important seasonal habitat."

As part of MICRA's multi-state paddlefish study, several paddlefish on the Cedar River at Palisades-Kepler State Park were collected in early June and injected with coded wire tags. Additionally, a 30-pound female and a 17-pound male were implanted

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weeks."

"The radio signal, though a simple event, was exciting for John and myself," Siegwarth said. "It represented a big step in our knowledge of paddlefish populations in Iowa."

Meanwhile in Wisconsin's Chippewa River, following the pattern observed in 1995, radio-implanted paddlefish have returned to their overwintering site following a nearly month-long springtime journey downstream to portions of Upper Mississippi River (UMR) Pools 4, 5, and 5A. According to Mark Steingraeber, a prolonged period of high discharge prompted the opening of UMR flood gates this spring that likely facilitated these downstream movements as well as the upstream movements of other radio tagged paddlefish in the UMR system.

In early July U.S. Fish and Wildlife Service biologists of the Carterville (IL) Fisheries Resource Office implanted six paddlefish ranging in size from 10-30 pounds with radio transmitters. These fish were collected from Swan Lake, a major river backwater, and will be tracked in order to identify critical Mississippi River paddlefish habitat in possible need of protection and/or restoration.

According to Chuck Surprenant, the transmitters will also be used to determine paddlefish migration patterns, identify obstacles to paddlefish migration, and to determine if paddlefish will move through an experimental water control structure being constructed at the mouth of Swan Lake which will isolate the lake from the river. The fish will be tracked weekly over an expected period of two years, the life of the transmitters.

(Contact: John Pitlo, (319) 872-4976, Mark Steingraeber (608) 783-8436, and Chuck Surprenant (618) 997-6869.

Sturgeon Being Assisted By Zebra Mussels?

The lake sturgeon, nearly wiped out in Lake Erie, seem to be coming back. Some scientists believe that the zebra mussel may be helping out. Increasing numbers of sturgeon are turning up in western Lake Erie, and fishermen and scientists credit their growth to the zebra mussel.



"lake sturgeon"

"The sturgeon is a bottom feeder, and since the mussel is transferring energy from the pelagic, or free-swimming mode, which prevailed in Lake Erie, to a

benthic, or bottom-oriented food chain, we believed that studying a sturgeon might be profitable," said Dieter Busch, head of the Lower Great Lakes Laboratory of the U.S. Fish & Wildlife Service.

Unfortunately, a Memorial Day fish-kill on Lake Erie saw thousands of fish turn belly up from Dunkirk to Sturgeon Point, but offered one bright spot: a fresh, young sturgeon was netted. Christopher Lowie, a researcher with the Lower Great Lakes Laboratory, found the fish and said the find is good news for studying the species. "We got the DNA samples we wanted and sent them to the lab," Lowie said. "That's good because DNA evidence is important if we are going to restore the lake sturgeon here."

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
(MICRA)
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Bettendorf, IA 52722-0774

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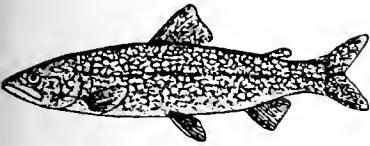
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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

The federal agency, which has been concentrating on the more profitable lake trout restoration in lakes Erie and Ontario, now wants to help the sturgeon make a comeback even though that plan is fraught with difficulty.



"lake trout"

"The big problem is that the results can take a generation to show up," Lowie said. "Sturgeon don't reach sexual maturity until age 20 or 25 -- when they are five feet long -- and they can live more than 100 years."

The lake's ecology has been changing too rapidly for science to keep up with, or to predict accurately. There is less food for smelt, which, in turn, means less food for trout, salmon and walleye, the three most targeted species in the lakes. But bottom-feeders, like catfish and bass, are booming, as are lake whitefish, another species almost gone, but now bouncing back along with hordes of aquatic insects. This change has occurred simultaneously as the lake waters are filtered clean by zebra mussels.

The sturgeon have a great appeal for biologists because they have survived for millions of years, and while they have been greatly prized through the centuries as table fare -- sturgeon roe makes the finest caviar -- little attention has been paid to them until now.

Another suspected role for the sturgeon may be its use in controlling the sea lamprey. In Lake Ontario, where the parasitic sea lamprey was believed extant for many years, it is possible that the Atlantic salmon and lake trout

thrived because the sturgeon fed on the lamprey's early life stages.

A century ago, lake sturgeon were plentiful, says Henry Regier of the University of Toronto. He said sturgeon were fished commercially by German and Eastern European immigrants who had a booming trade in smoked sturgeon until the fish grew scarce.

Now commercial netters are helping with the sturgeon project, Lowie said. "It started with sighting reports in 1994 -- sports anglers in the lower Niagara River told me about some, but I got more sightings from the drift-diving clubs that swim in the upper river.

"They report a lot of sturgeon in the 5 to 6-foot range." Neither Canadian nor American commercial fishermen can keep sturgeon from Lake Erie, and in New York, sport anglers must release them as well. Across the river they are fair game, and fishermen sometimes hook into them while wade-fishing the upper Niagara on the Ontario shore.

Commercial fisherman Gary Penner of Kingsville, on Pigeon Bay near Windsor, Ontario, said he has seen a boom in sturgeon in recent years. "When I started fishing 15 years ago, we'd catch maybe 10 sturgeon a year," Penner said. "But I believe the zebra mussel is helping sturgeon, they've been coming back as the mussel has been increasing. Last year, I caught almost 5,000 sturgeon from hand-sized to a six-footer."

"The only change in the lake I have seen is due to the mussel," Penner said. "The water is cleaner, so the whitefish are coming back and perch are declining. I once caught a sturgeon, when that was legal, that was stuffed with snails, so I suppose they have shifted to the

mussel now."

Source: Buffalo News, 6-15-96

Fish Advisories Up 14%

The numbers of U.S. lakes, rivers and waterways where consumer advisories have been issued to avoid or limit consumption of trout, salmon or other species because of chemical contamination rose 14% in 1995 over 1994 levels. A recently released U.S. Environmental Protection Agency (USEPA) report said advisories were issued for 1,740 water bodies in 47 states representing 15% of the total U.S. lake acres and 4% of the total U.S. river miles.

In 453 cases, the advisories recommended that everyone avoid eating a certain fish species; in 1,042 instances, they said that children, pregnant women or other vulnerable groups should limit their consumption. The report said salmon, trout and walleye tend to have higher amounts of contaminants because of their high concentrations of fatty tissues, which store the chemicals.

In 1995, 46 contaminants were found in fish. Mercury accounted for 1,308 of the advisories, up from 899 in 1994. Mercury advisories were posted in 35 states; some 90% of those were in FL, GA, MA, MI, MN, ND, NJ, NM, SC and WI.

Advisories for PCBs totaled 438, up from 319 in 1994. Those for chlordane and other assorted chemical compounds increased 16% last year. The warnings for DDT increased 3% even though the insecticide was banned in 1972. The increase "is probably from the persistence of DDT in the environment and to its continued use in Mexico, which shares several bodies of water with the U.S."

Some 47 states now have some form of fish-consumption advisory, and the EPA attributed some of the increase in advisories to improved monitoring by the states. The agency said its report was meant to establish for the first time a "baseline" with which to measure the success of future efforts to protect water quality.

Sources: U.S. EPA and Greenwire Vol. 6, No. 30

Stickleback Invades Lake Michigan

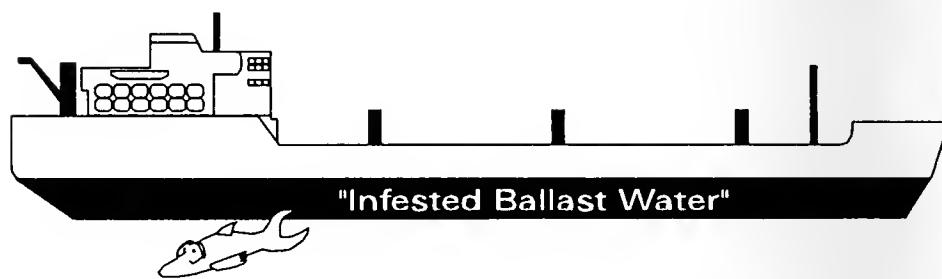
The three-spined, chrome-colored stickleback is among the latest fish species to invade and begin taking over our freshwater lake and river system. The fish has been spotted, caught and documented many times this spring in Lake Michigan from Port Washington, WI, to lower Michigan. Port Washington is just north of Chicago where the Sanitary and Ship Canal connects Lake Michigan to the Illinois River and the entire Mississippi River Basin.

The stickleback's existence in the lake was first noted in 1984 and showed moderate population increases in 1989 and 1993, but no one can remember anything like this. "This just seems to be a big year", said Tom Burzynski, a Lake Michigan fishery biologist for the Wisconsin Department of Natural Resources.

The three-spiner, about the size of an alewife with sharp spike-like spines on top and bottom, is from Europe and Asia. It arrived in ship ballast, as have other invaders such as the zebra mussels and the river ruffe. Ships often load unregulated and polluted ballast water at one port to stabilize their cargo, and then release it when they dock at another port (often far away or even in a foreign country).

The presence of the stickleback

and the continuing debate over ballast water exchange by foreign freighters has some people curious and others very upset. One way to guard against ballast water introduction is to have ships change their ballast water at sea. But since ballast provides stability to a ship, mid-ocean changing can involve risks.



No one is more ticked about that than Jack Vadas, president of Perch America, a group of fishermen dedicated to saving the Great Lakes. "For 10 years, we've been fighting and screaming and nobody has done anything...There is no way in the world you can empty a ship of all its ballast water. It is estimated that there are 150,000 gallons of water in a ship after the exchange is made. That water should be treated with a chemical (to kill foreign organisms) and it's not being done."

"I've been waging a 40-man war since we first saw them last fall," Vadas said. "There were just a few, but then this spring, there were reports that quite a few were being caught in smelt nets." "We started investigating and found out they are all over the damn lake." Vadas is concerned about the impact the three-spined stickleback is having on perch or other fish.

A recent National Research Council report encourages more research on filtration technologies, but recommends using both ballast water exchange and filtration. Governors John Engler (R/MI), Tom Ridge (R/PA) and

Tommy Thompson (R/WI) announced on July 21 a new \$1 million project that will test the efficacy of filtration technology in preventing the intake of unwanted foreign organisms in ships' ballast water.

Source: Chicago Sun-Times, 6-4-96 and Greenwire Vol. 6, No. 58

Sixty-six Percent of Freshwater Mussels Imperiled

Two-thirds of freshwater mussels and crayfish in the U.S. are at risk, according to a new study by The Nature Conservancy (TNC). The report also found that some 37% of U.S. freshwater fish species and 29% of amphibian species are in trouble.

The problem is most severe in the Southeast, where most of the nation's freshwater mussels live, and in the Southwest, home to many endangered fishes and amphibians. Aquatic species "hot spots" such as AL, FL, GA and TN "have the greatest proportion of imperiled aquatic and wetland animals, with more than 15% at risk," according to the report.

Threats to the species in the East include pollution and channelization of streams and rivers, while in the West, species are endangered by large water withdrawals and diversions.

TNC President John Sawhill said freshwater mussels and fish are "indicator species", "When their numbers drop, they provide warning signs of problems with water quality and ecosystem

stability".

Source: Greenwire Vol. 6, No. 32

Teaming With Wildlife

A broad coalition of outdoor enthusiasts has developed a legislative initiative called *Teaming With Wildlife* which proposes an excise tax on outdoor products that would generate funds to be used for wildlife diversity projects focused on conservation, recreation, and education, primarily to benefit the country's vast fish and wildlife resources. The proposed legislation may be cited as the "Fish and Wildlife Conservation Enhancement Act of 1996". MICRA has gone on record in support of this important legislation.

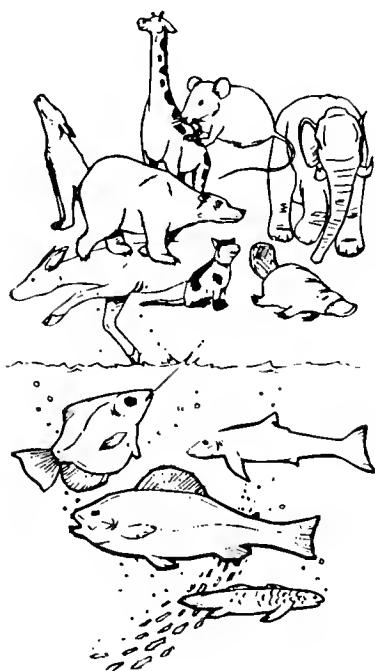
Hunters and anglers have paid similar user fees on hunting and fishing equipment for nearly 60 years. These funds are collected through an excise tax applied by the equipment manufacturer. Key legislation which authorize the collection of this excise tax are known as Pittman-Robertson, Dingell-Johnson and Wallop-Breau. Distribution of these funds to the States and U.S. Territories is accomplished through a mathematical formula based on 60% of a state's licensed sportsmen and 40% on its land and water area.

Under the proposed *Teaming With Wildlife* legislation, outdoor recreation equipment would be subject to the new excise tax, as would optical equipment. Also included would be photographic equipment and backyard wildlife supplies and guide books, including field identification guides (e.g. wildlife viewing guides); recreational vehicles (RV's) and sport utility vehicles.

It is envisioned that the user fee would be based on a percentage of the manufacturer's price of the product, ranging from a low of

0.25% to a maximum of 5%. These fees would be reflected in an increased retail price paid by the consumer. For example if a field guide's retail price was \$10 and the manufacturer's price was \$6; the tax would be 30 cents [$6 \times .05 = 30$], so the consumer would end up paying \$10.30 for the field guide.

The U.S. Treasury would collect the user fees as excise taxes from manufacturers and pass them through the U.S. Fish & Wildlife Service (USFWS), similar to the procedure used to handle Pittman-Robertson, Dingell-Johnson, and



Wallop-Breau acts. The manufacturer would bill this cost to the retailer, to be paid by the user/customer. Manufacturers would pay these fees through their routine, quarterly IRS reports. Customers would know they are contributing to the *Teaming With Wildlife* program because the fund's green logo would be displayed on the product's tag with a short explanation that the funds are dedicated for wildlife conservation, recreation, and education.

No State or Territory would receive less than 0.5% or more than 5% of the total funds. States and Territories would be required to match these funds with non-federal dollars on a 25% state to 75% federal basis. Matching funds could be cash or in-kind donations. Each state would prepare a federal aid application addressing the specific needs and priorities found within their State, and which meets the "substantial characteristics and design" of the law. A joint agreement would then be signed with the USFWS office of Federal Aid, allowing for allocation of the funds to the State. States would have flexibility to tailor particular programs to meet the unique and varying needs found across the country. A grants program would be created for projects of regional and national significance.

Essentially, *Teaming With Wildlife* would adopt the same funding/distribution mechanisms used for the Pittman-Robertson/Dingell-Johnson programs which funnel the funds directly to the States.

Of critical interest to Indian Tribes is the fact that the proposed mechanism for *Teaming With Wildlife* fund distribution makes no provision for Tribal involvement. In response to this situation the Native American Fish & Wildlife Society (NAFWS) is encouraging tribal leaders and others to generate letters to the outdoor product industry and congressional delegations calling for revisions to the legislation that will facilitate funding opportunities on Indian lands.

NAFWS points out that:

- federally recognized Tribes have jurisdiction over a reservation land base of 52 million acres;
- Tribal lands, coupled with Ceded and Usual and Accustomed areas total a natural resource base of over 140,625 mi², including more than a million acres of lakes and impoundments (exclusive of the 21,596,800 surface acres of

the Great Lakes Ceded Area) and thousands of miles of streams and rivers;

- Native Governments of Alaska have over 45,000,000 acres of land which support Native subsistence hunting, fishing and gathering, essential to maintain a traditional lifestyle;
- At least 9 officially recognized threatened and endangered species occur on Native lands including 9 birds, 7 mammals, 11 fish, 12 plants, and one threatened reptile;
- Tribal fish hatcheries produce millions of salmon, steelhead trout, walleye and other species which support large and diverse fisheries;
- Wetlands on reservations total over 20 million acres; and
- 35,508 miles of flowing water occur on Indian land.

Source: From the Eagles Nest - A publication of NAFWS, Vol. 9, No. 2

ESA Issues

In a "little-known overhaul," the U.S. Fish and Wildlife Service (Service) earlier this year pared its list of potential candidates for listing under the Endangered Species Act (ESA) from 4,000 to 182.

The move essentially abolished the agency's three-tiered system for rating and listing candidates. Only certain "category one" species for which the agency had sufficient information to support listing were retained on the candidate list. The other two categories -- those not considered suitable candidates and those with not enough data to warrant listing -- were eliminated.

The Service said the "change reflects reality." According to the Service's Megan Durham, "It was never true that all those candidate species were going to make the endangered species list. This was a scientific scrubbing of the

candidate list that was long overdue."

Many biologists say the change "will damage efforts to protect plants and animals" by reducing federal land managers' incentives to protect the species' habitat. Boise National Forest's Wayne Owen said, "As soon as Fish and Wildlife says we're not interested in all these species, the Forest Service and Bureau of Land Management start putting less effort into protecting the species. We start blowing them off."

Still, ESA foes "say they aren't impressed by the move," noting that it doesn't solve the problem of current land-use restrictions caused by species already listed. According to Pat Holmberg of the Alliance of Independent Miners, "If they were delisting species that have already been listed, I'd do some cartwheels."

The Service decision to remove the potential candidates is being challenged in federal court by the Biodiversity Legal Foundation, which claims as many as 9,000 species are in need of protection.

Meanwhile, Representative Don Young (R/AK), chairman of the Resources Committee has said that he should have followed the advice of first-year Representative Doc Hastings (R/WA) at the beginning of the 104th Congress. "What I should have done is repealed the whole act. If I had done what Doc told me, I would have repealed the whole thing. Right quick. Before anybody realized what had happened."

Young railed against eastern GOPers who he said weren't enviros but still resisted changes in enviro laws because of political pressures, attacking the GOP moderates as "spineless."

Although reform of the ESA is dead in Congress this year, Representative Jim Saxton (R/NJ) said on July 16 that he would

lead a movement in the next Congress to reauthorize it. Saxton, chairs the House Resources Fisheries, Wildlife and Oceans Subcommittee, and has been working to devise a compromise bill that would satisfy both moderate republicans and mainstream enviros.

Source: Greenwire Vol. 6, No. 44, 46, and 54

State Biodiversity Programs Graded

Defenders of Wildlife (DOW) issued a ranking of state-level efforts to protect biodiversity on July 15, concluding that only six states deserve a passing grade. The report placed WY, UT and ID in last place and CA in first. WY, UT and ID scored 39, 40 and 40 points, respectively, out of 100 possible; CA scored 79 points.

The analysis, prepared with the help of the NM-based Center for Wildlife Law, rated each state in ten areas, including the states' efforts to enact biodiversity-conservation policies, conduct biodiversity inventories and protect endangered species.

WY Game and Fish spokesperson Larry Kruckenberg argued that the DOW rating systems relied too heavily on whether states have enacted policies to protect biodiversity, rather than actual levels of species or ecosystem health. Kruckenberg, noting that WY boasts high levels of most native species said, "We put our stock in what we've got, as opposed to the statutes and policies we've put in place to protect them."

DOW acknowledged that its approach did not consider the states' effectiveness in implementing biodiversity laws. Group President Rodger Schlickeisen noted that some members of Congress want to turn some federal species- and

habitat-conservation programs over to the states. But "this analysis shows that most states do not earn a passing grade exercising even their current responsibilities for stewardship," he said. The group noted that WY was ranked as the least ecologically endangered state in a study it released six months ago.

UT officials objected to the DOW study on similar grounds. UT Department of Natural Resources Director Ted Stewart said his state was taking action to preserve biodiversity, pointing to several specific efforts to protect endangered species and habitats.

Only six states received passing grades from DOW, including CA, NY (66), HI (65), MD (64), IL (61) and CT (61). Scores of MICRA states (as ranked by DOW) follow: NY (66), IL (61), MO (59), MN (58), PA (57), CO (55), KY (55), MT (55), NC (55), WI (53), IN (52), NE (51), TX (50), IA (49), SD (49), TN (49), AL (48), LA (46), OK (46), GA (45), VA (45), AR (44), KS (43), ND (43), MS (42), OH (41), WV (41), WY (39).

The full report is on the World Wide Web at www.defenders.org. Another DOW report issued in December 1995 concluded at least 34 states face "extreme" or "high" risks to their natural ecology.

Source: Greenwire Vol. 6, No. 55

Fish and Wildlife Service Director Mollie Beattie Dies

Mollie Beattie, former director of the U.S. Fish and Wildlife Service (FWS), died June 27 in her home state of Vermont after a year-long battle with brain cancer. She was 49 years old.

The first woman ever to lead the FWS, Beattie had been an impassioned champion of the Endangered Species Act and the National Wildlife Refuge System.

She also played a major role in getting MICRA and state biologists involved in helping to develop new national floodplain management strategies in the aftermath of the 1993 midwest floods.

President Clinton praised her dedication to conservation. "America lost one of its great spirits with the untimely passing of Mollie Beattie," he said. "Mollie was a person who believed in the value of life and wildlife so deeply that she dedicated her many talents to preserving God's gracious earth."

Beattie had battled brain cancer for more than a year and had undergone two operations to remove malignant tumors. She returned to work in April after a four-month leave of absence, but her worsening condition prompted her resignation on June 5. Deputy Director John Rogers was appointed acting director.

House Resources Committee Chairman Don Young (R/AK), who often found himself at odds with Beattie on policy matters, offered her high praise. "While Mollie and I often differed on legislative issues, we were able to work closely together because she was a person of the utmost integrity and professionalism. I respected the fact that when she took a position she truly believed it was the right thing to do," he said. "She was a straight shooter who earned the respect of all of us in Congress."

The AK Congressional delegation introduced legislation in both houses to designate the 8-million-acre wilderness portion of the 19-million acre Arctic National Wildlife Refuge as the "Mollie Beattie Alaska Wilderness Area." President Clinton signed this legislation (S. 1899) into law on July 29th. A monument commemorating her contributions to fish, wildlife and waterfowl conservation and management

will be placed at the entrance of the wilderness area as designated by the Interior Secretary.

"I am deeply grateful to Congressman Don Young for his leadership in introducing legislation in the House of Representatives to name one of the most awe-inspiring wilderness areas in the United States after Mollie Beattie," Babbitt said. "This wilderness spans the heights of the majestic Brooks Range, towering over the seasonal pageant of migrating wildlife along the Arctic coastal plain in the Arctic National Wildlife Refuge. Alaska is a place that enchanted Mollie in her duties as director of the Fish & Wildlife Service, and it is a place where she longed to return."

In signing S. 1899, President Clinton said, "It is entirely appropriate that we honor Mollie in this way. She was a passionate defender of our 508 National Wildlife Refuges, the largest system of lands in the world dedicated to wildlife conservation. She saw them as places that must be appreciated and honored, as places where we could begin to fulfill our sacred trust as stewards of God's creation. Mollie worked tirelessly, even as her health was failing, to keep these places wild for the benefit of Americans today and for those who will follow us."

Beattie's vision, in the spirit of Aldo Leopold, was about revitalizing the FWS and fostering a new land ethic across the country. At her swearing in as director, she held a copy of Leopold's *A Sand County Almanac* under the Bible, so convinced was she of his wisdom and its application to our time.

In Beattie's words, "We can do all the regulating we want, but if we're not changing people's relationships with the land into an ethical one through other means, then we aren't going to get

anywhere. I think [Leopold] got it exactly right that government can only do so much in terms of buying land and regulating," she said. "And he's got this wonderful line about how if a thing is wrong and a thing is right In this business, if there's anything you've got to remember at all times it's right from wrong, and that is such a wonderful guideline."

Her indomitable spirit and passion for wild things and places will be sorely missed!

Source: Land Letter, Vol. 15, No. 19

Yellowstone Update

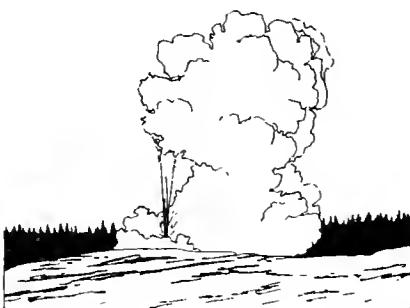
Houston-based Battle Mountain Gold on July 15 gained controlling interest in the New World Mine project planned for an area just outside Yellowstone National Park in Wyoming. Battle Mountain bought out Toronto-based Hemlo Gold Mines for \$1.5 billion, and as part of the deal acquired a 60% stake in Crown Butte Mines, Inc., which is trying to develop the controversial gold mine two miles upstream from Yellowstone.

The proposed mine has drawn strong opposition from environmental groups, including American Rivers, the Sierra Club and the Greater Yellowstone Coalition. Enviro's worry that waste rock from the mine containing high levels of sulfides could leak downstream into Yellowstone and foul the park. Battle Mountain Chair Karl Elers said the company is studying the project and will decide later whether to proceed with it. He said the company may look at alternative methods to mining at the site.

The decision on whether to let the proposed New World Mine operate outside Yellowstone National Park will be made by U.S. Department of Agriculture

(USDA) Secretary Dan Glickman, rather than by U.S. Forest Service (USFS) officials in Montana. USDA spokesman Jim Petterson said Glickman decided two or three weeks ago that he would make the final determination about the project. "Given the level of public interest, the complexity of issues and the location next to Yellowstone, it needs the attention of people higher up", Petterson said.

Gallatin National Forest Supervisor Dave Garber said that the move was a "surprise" for the USFS, but that he would send his recommendations to USDA. The USFS and the Montana Department of Environmental Quality plan to release a draft



environmental impact statement (EIS) for the mine later this summer. President Clinton imposed a two-year moratorium on new mining claims on federal land around Yellowstone in August 1995, preventing further expansion of Crown Buttes claims and said the EIS will require the mine to meet the "highest standards".

Senator Craig Thomas (R/WY) on July 23 announced his opposition to the controversial project. "There is only so long you can withhold your opinion when in fact you have a strong conviction that this might be the worst place to site a mine", Thomas said.

In a related matter, Representative Don Young (R/AK) has introduced a bill to prevent UN-affiliated

panels from designating federal lands as World Heritage sites or Biosphere Reserves without congressional approval. The bill would nullify all Biosphere Reserves unless they win congressional approval by December 31, 1999. Congress would also have to approve World Heritage sites and World Heritage "sites in danger." At the moment, the U.S. has 20 World Heritage sites, 18 of which are parks, and 47 Biosphere Reserves that encompass an area larger than Colorado, according to the Resources Committee, which Young chairs.

The World Heritage program entered the Yellowstone controversy in 1995 when its committee named Yellowstone National Park a "world heritage site in danger," saying it was threatened by the proposed New World mine. Such designations in theory commit the U.S. to protecting sites, but the Clinton administration has claimed they do not result in any binding actions.

But Young says the programs are part of a "one world-zoning enterprise" run by the administration and its UN allies. On the House floor Young said, "Men and women from Third World kleptocracies decide what goes on in America's backyards, and their elected officials have nothing to say about it." The bill's supporters say that even though the designations do not supersede U.S. law, they can "be a powerful club in the hands" of environmental interests.

Young's bill hasn't been scheduled for hearings, but enviros "already are mounting a counteroffensive." They say the designations have no real impact on how the land is used.

In the meantime, National Park Service (NPS) officials are threatening to shut down Yellowstone National Park this fall

because of a lack of funds. The NPS is considering closing the park from Sept. 28 to Dec. 20 and from Mar. 1997 to May 1997. No other parks would be affected. Yellowstone faces a \$700,000 budget shortfall this year, according to Yellowstone spokesperson Marsha Karle.

The Interior Department is now in the process of choosing up to 50 facilities as sites for a fee experiment, which will allow parks to keep 80% of their entrance fees. Presently, parks are allowed to keep only 15% of their gate receipts, with the rest going to the U.S. Treasury.

The NPS is also reviewing the privately run lodging, restaurants and other services at Yellowstone. All contracts and permits for commercial use of Yellowstone expire between 1999 and 2002. By December 1998, park officials want to have a plan for future commercial use of the park.

Source: Greenwire Vol. 6, Nos. 53, 55, 56, and 59

Idaho Agreement Protects Streams

Idaho Governor Phil Batt (R) on June 6 signed a "historic" agreement with state and federal officials, ranchers, miners and enviros allowing Lemhi County commissioners to oversee efforts to keep rivers and streams in the county in "top ecological health."

The Lemhi County Riparian Habitat Conservation Agreement sets up a process for deciding what streams and rivers need the "most help" and makes it easier for ranchers and miners to comply with the federal Endangered Species Act (ESA). While most habitat conservation plans under the ESA have focused on individual species, this one is "unique" because it takes a regional approach and includes voluntary participation from

landowners.

Federal officials hope the plan will become a nationwide model for solving "bitter disputes" over endangered species. Mike Dombeck, acting director of the Bureau of Land Management said, "You can have all the directives you want on Mike Dombeck's desk in Washington, but it's local people working together that make it happen." The agreement "epitomizes" the local control that Senator Dirk Kempthorne (R/ID) is pushing in his rewrite of the ESA

Source: Greenwire Vol. 6, No. 28

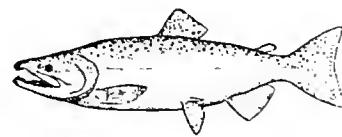
More Natural Salmon River Management

Saving northwest salmon will require "sometimes-costly" changes to hydropower dams to return the Columbia River in Washington to a more natural state, Richard Williams, chairman of the Independent Scientific Advisory Board, said on June 11.

The remarks came in a report to Congress from the 11-member independent scientific panel, which was formed by the Northwest Power Planning Council (NPPC) and the National Marine Fisheries Service (NMFS) to prepare a report on how to save Northwest salmon.

Williams told the Senate Environment and Public Works subcommittee that "if you want more fish, you are going to have to manage the river more like a river." "Restoration of Columbia River salmon will require changes

that move the regulated river system toward a more natural ... set of conditions," including reserves to protect intact habitats that contain "key" populations, he said.

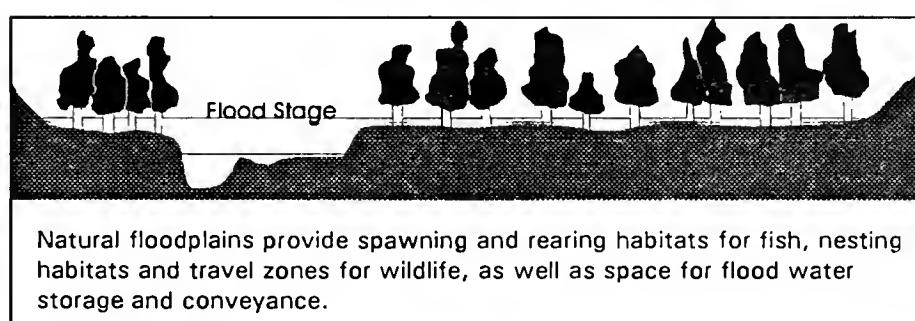


"chinook salmon"

Preliminary findings presented to the NPPC earlier this spring said some reservoir drawdowns and periodic scouring of the river bank with flood water are "crucial" to restoring the Columbia's dwindling salmon runs.

In an effort to force the feds to follow their own salmon restoration plan for both the Snake and Columbia rivers, a coalition of 10 enviro and fishing groups on June 12 filed a motion in a federal court for a preliminary injunction against the government.

The motion accuses the NMFS, the U.S. Army Corps of Engineers (COE) and the Bureau of Reclamation (BOR) of failing to implement guidelines outlined in a federal plan drafted in March 1994 to help salmon migrate to the Pacific Ocean. Specifically, the plaintiffs claim the government has failed to maintain an adequate water flow in the Snake and Columbia rivers. Dan Rohlf, an attorney for the groups, said the federal plan is deeply flawed but should be implemented as an initial step to



Natural floodplains provide spawning and rearing habitats for fish, nesting habitats and travel zones for wildlife, as well as space for flood water storage and conveyance.

save the salmon. But William Stelle of the NMFS said the agency is doing all it can to restore salmon populations and called the lawsuit a distraction to the process.

U.S. District Judge Malcolm Marsh, who has deliberated on salmon cases in the past, "will probably" rule on the motion. Rohlf said he hopes for a decision by July 1996.

Faced with "tight" Pacific Ocean salmon seasons to protect dwindling salmon runs, fewer fishers are buying licenses, forcing the OR Dept. of Fish and Wildlife (ODFW) to cut hatcheries, biologists and fish and game officers. Going into 1997-99, the agency plans a 4% cut from its current \$175 million two-year budget. The cuts concern some enviros and fishing groups. Don Watson of Northwest Steelheaders says the ODFW is a "key player" in implementing OR Governor John Kitzhaber's (D) salmon recovery program.

In California in an effort to rescue winter chinook salmon runs from extinction in the Sacramento River, the U.S. Bureau of Reclamation (BOR) is constructing the "largest man-made mechanism ever dedicated to fish preservation" at the Shasta Dam.

The \$80 million Temperature Control Device will enable dam operators to provide a reliable flow of cold water to 55 miles of the Sacramento River during the summer, when the salmon -- listed as protected species under the CA and federal endangered species acts -- are at a "critical" growth stage. The system, built on the reservoir side of the dam, will use steel shutters to draw water from different levels of Shasta Lake, including deep cold water salmon need to survive. The system is "tall as the Statue of Liberty, wide as a football field" and weighs 8,500 tons.

For the past nine years, BOR has been forced to stop power generation during salmon spawning and rearing months to run cold water through outlet pipes. The new system will enable BOR to continue generating electric power while it helps young salmon.

Project construction, which began in January 1995, is expected to be completed by December 1996.

Source: Greenwire Vol. 6, Nos. 24, 31 and 33

Floodplain Report Released

A new report on public policies for floodplains, "On Borrowed Land," was recently released by the Lincoln Institute for Land Policy. The report, which is authored by Scott Faber of American Rivers, considers the ecological, economic and legal issues of land use in floodplains. It offers numerous case studies of local responses to the 1993 Midwest floods, as well as other river basin management programs around the country, while suggesting new ways to make floodplains safe for development.

For copies send \$14.00 to the Lincoln Institute, 113 Brattle Street, Cambridge, MA 02138-3400, (800) 526-3873.

South Platte River Water Decision

A federal judge in Denver on June 5 threw out a 1991 lawsuit filed by eight suburban water providers to revive the Two Forks water project on the South Platte River. The Denver Water Board and other water providers had planned to dam the South Platte and create a 33-year water supply for the Denver metropolitan area, but the USEPA vetoed the "multimillion-dollar" plan in 1990.

The lawsuit accused the EPA of

wrongly using federal clean-water laws to protect recreational and scenic uses of the South Platte. But U.S. District Judge Richard Matsch said the water providers lacked the legal standing to challenge the EPA veto. In the ruling, Matsch said the Two Forks controversy "centered on a very difficult policy choice between assured water resources for continued urban development and preservation of a native environment." Matsch said his ruling only indicates that the EPA's decision did not violate any rules.

Wally Welton, president of Consolidated Mutual Water Co., one of the water providers in the suit, said the verdict won't affect Denver's current water supply. Welton also predicted that the project won't "completely die," but it might take a "three-year drought to get people to recognize the need for it."

Dan Luecke of the Environmental Defense Fund, which has opposed the Two Forks plan for about 15 years, was pleased with the ruling.

Source: Greenwire Vol. 6, No. 29

NC-TN Water Quality Dispute

TN and NC enviros and TN officials have voiced opposition to a pending NC permit that would allow Champion International Corporation to discharge a "coffee-brown" effluent into the Pigeon River, which runs through both states. But enviros say Champion hasn't done enough to clean the river. Ginny Lindsey of the Clean Water Fund of NC said, "We look at water permits all across the state. The polluters wield tremendous influence. They basically write their own permits."

Champion has spent \$207 million on river cleanup over the past several years, and Champion's Tucker Hill says the

permit makes it cut back on organic material dumped in the river and "reduces the amount of color we can put in the river by 23%."

Enviros want the permit to include full treatment of organic waste from the plant, daily monitoring of the river's color and standards to deal with dioxin that has settled in the sediment of NC's nearby Waterville Lake.

Source: Vol. 6, No. 26

NC Ag Wastes

A cattle farm owned by Senator Lauch Faircloth (R/NC) on June 10 was blamed for a major fish kill along a 20-mile stretch of the Black River, "one of the state's most pristine waterways."

NC regulators said thousands of fish died after about 250,000 gallons of partially liquified sweet potato scraps leaked into a creek from a feed bin at a Faircloth Farms facility. "The decaying scraps depleted oxygen miles downstream in the Black River," which two years ago was designated by the state as an "Outstanding Resource Water."

Faircloth apologized for the accident and acknowledged his farm's guilt, saying a worker forgot to shut a valve. "But state officials noted that the farm's managers had been warned during an inspection last year about the potential for just such an accident." Faircloth could face a state fine of up to \$10,000.

Faircloth, "who a year ago was cool to the idea of increasing regulations for hog farmers," said on June 10th that he now believes NC is "moving in the right direction" in considering permits and mandatory inspections for large farms.

Source: Greenwire Vol. 6, No. 31

Ohio Waste Permits Violated

More than 40% of the major industrial and municipal wastewater treatment plants in OH violated their pollution discharge permits for waterways, according to the General Accounting Office (GAO).

But the Ohio EPA disputes the GAO finding, claiming the GAO used incomplete and erroneous data in its national study. The OH EPA says only about 10% of Ohio's 294 major industrial and municipal treatment plants exceed permitted pollution limits.

The GAO study has prompted OH-based Rivers Unlimited to lobby state regulators to drop support of a proposed "anti-degradation" law that would allow increased pollution discharges into most state waterways.

"A Franklin County Common Pleas judge is expected to rule soon on whether to allow the state to implement" the law, which is based on the assumption that rivers can absorb more pollution without endangering water quality. The law would allow pollution increases without new permits, public review or public comment.

Source: Greenwire Vol. 6, No. 60

AR Logging Injunction

The Arkansas Sierra Club on June 18 filed for a preliminary court injunction with the U.S. District Court in Little Rock, AR to halt logging now under way near the headwaters of the Buffalo National River in the Ozark National Forest.

The Arkansas Sierra Club and other enviros in October 1995 sued the U.S. Forest Service, claiming the agency missed a deadline for filing a management plan for the river. Tom McKinney, president of the Arkansas Sierra

Club, said the logging is eroding the river's watershed and is killing wildlife.

In April 1996, U.S. District Judge Bill Wilson ruled that logging is harming the forest's ecosystem, but refused to grant an injunction to stop the cutting "until the case can go to trial." The lawsuit is expected to go to trial late this year. Since Wilson's decision, environmentalists have been staging demonstrations against the logging.

Source: Greenwire Vol. 6, No. 38

Federal Judge Reverses Some Interior Grazing Rules

A federal judge on June 12 rejected some of the Interior Department's (DOI) 1995 rangeland reforms, asserting that they would "wreak havoc" on the ranching industry and go beyond the law. The rules were issued in August 1995 and were supposed to go into effect in March 1996 but were held in abeyance while five groups representing livestock interests sued to block them.



In his ruling, U.S. District Judge Clarence Brimmer barred a provision that would have weakened ranchers' rights to renew their federal grazing leases. Brimmer said the term "grazing preference" was included in the 1935 Taylor Act to give ranchers and their creditors some certainty about future operations. The DOI reforms would have emphasized "permitted" uses of lands.

Also rejected were regs that would have given the U.S. government title to future range

improvements, allowed conservation-use permits, and made it easier for nonranchers to obtain permits. But Brimmer upheld a proviso allowing DOI to determine whether permittees have met the stated terms and conditions. And he said the agency had followed proper procedure in issuing the regulations.

The groups challenging the regulations were the National Cattlemen's Association, Public Lands Council, American Farm Bureau Federation, American Sheep Industry Association and the Association of National Grasslands.

Representative Richard Pombo (R/CA) said GOPers are looking for other legislative vehicles to carry committee-passed grazing reforms in case an effort to attach them to omnibus parks legislation fails. The grazing bill would bar all of DOI's reforms. Adding it to the parks bill, currently in a House-Senate conference, "is seen as a way of getting around" an administration veto threat. But Interior Secretary Babbitt has told senators he would recommend a veto of the parks bill if it contains any measure unacceptable to the administration.

Source: Greenwire Vol. 6, No. 35

Electronic Collars for Cattle

Cowbells at a Cumberland, MD dairy farm have been replaced with "shock collars" to prevent its 100 bovine inhabitants from wandering near the eroding banks of a Potomac River and Chesapeake Bay tributary.

Each cow wears a loose-fitting leather choker with a pink plastic box that "jolts" the animal if it wanders near Pea Vine Run. The collars are part of a \$120,000 taxpayer-funded project to reduce watershed pollution in the area, where periodic flooding makes

conventional fences impractical.

The collars, which contain batteries that must be replaced every six to 12 months, beep as the cow approaches a wire buried along the banks. The beeps and fluorescent orange flags planted above the wire are supposed to help the cows "learn their limits." If a cow goes beyond the boundary, it gets a shock.

The collar manufacturer -- Invisible Fence Co. of Malvern, PA -- said the voltage is less than the 2,000 or more delivered by most electric fencing. Still, "they zap pretty good," said Allegheny Soil Conservation District Manager Craig Hartsock, who tried a collar on himself.

Source: Greenwire Vol. 6, No. 57

Techniques to Establish Streambank Vegetative Plantings

Several techniques can help establish vegetative plantings on streambanks and prevent erosion. Some examples follow:

- Live staking: Live, rootable vegetative cuttings are inserted and tamped into the ground perpendicular to the slope. Most willow species root rapidly.

- Live fascine: Long bundles of live branch cuttings are placed in shallow trenches dug on the contour of the slope. They are held by stout dead stakes driven through the fascines and stout live stakes inserted directly below the bundles. The fascines are then almost covered by moist earth and mulch is placed between rows.

- Brushlayering: Live branch cuttings are placed on small benches two to three feet wide, excavated at a slight tilt into the slope. Brushlayered branches serve as reinforcing units, retarding runoff and reducing

surface erosion, aiding seed germination and natural regeneration.

- Branchpacking: Alternating layers of live branch cuttings and compacted backfill repair small localized slumps, holes in slopes, and gullies.

- Live cribwall: A hollow, box-like interlocking arrangement of untreated log or timber members is filled with suitable backfill material and layers of live branch cuttings. The cuttings root inside the crib structure and extend into the slope, gradually taking over the structural functions of the wood members.

- Vegetated rock gabions: Rectangular containers of triple twisted, hexagonal steel mesh are placed in position, wired to adjoining gabions, filled with stones; then folded shut and wired at the ends and sides. Live branches placed on each layer between the rock-filled baskets will take root inside the gabion baskets and in the soil behind the structures, consolidating the structure and, in time, binding it to the slope.

- Vegetated rock wall: A combination of rock and live branch cuttings that differ from conventional retaining structures in that they are placed against relatively undisturbed earth and are not intended to resist large lateral earth pressures.

- Joint planting: Live cuttings are tamped into soil between open spaces in rocks that have been previously placed on a slope.

Source: USDA Natural Resources Conservation Service Engineering Field Handbook (210-EFH, 10/92), Chapter 18. "Soil Bioengineering for Upland Slope Protection and Erosion Reduction."

Watershed Tools Directory

EPA's new Watershed Tools Directory is a useful collection of 250 watershed tool summaries canvassed from EPA headquarters and regions, other federal agencies, states, and watershed organizations. The watershed tools described in the document include those for conducting modeling and assessments. Each summary includes a description of the tool, contact names and phone numbers, and information about intended uses.

The Directory can be accessed on-line at <http://www.epa.gov/OW/watershed/tools>. A form is provided for adding your own watershed management tool to the directory. Updates will be completed as new tools are received.

Contact: Chris Laabs, Watershed Branch (4503F), U.S. EPA, 401 M St., SW, Washington, DC 20460, (202) 260-7030. A copy of Watershed Tools Directory (841-B-95-005) can also be obtained from NCEPI, 11029 Kenwood Road, Building 5, Cincinnati, OH 45242, (513) 489-8695.

Urban Watersheds Planning Tools - New Handbook Series

The first three handbooks in a new Environmental Land Planning Series funded by an EPA Assessment and Watershed Protection Division grant to the Metropolitan Washington Council of Governments provide guidelines for different aspects of urban stream protection:

- Site Planning for Urban Stream Protection: Authored by Tom Schueler of the Center for Watershed Protection, this handbook presents a watershed approach to site planning. It examines nonstructural approaches to reducing pollutant loads and protecting aquatic

resources. Site Planning offers insight into the importance of imperviousness, watershed-based zoning, concentration of development, and other land planning topics (232 pages, \$35).

- Clearing and Grading Strategies for Urban Watersheds: Authored by Kathleen A. Corish of the



Metropolitan Washington Council of Governments, this handbook examines the water quality impacts of clearing and grading in urban watersheds. Its primary focus is on minimizing sediment loading to urban streams (107 pages, \$25).

- Riparian Buffer Strategies for Urban Watersheds: Authored by Lorraine M. Hersonlones, Maureen Heraty, and Brian Jordan of the Metropolitan Washington Council of Governments, this handbook provides guidelines for using riparian buffers to mitigate stream impacts in urban areas. It investigates pollutant removal potential and prevention techniques associated with chemical, biological, and physical processes in buffers and offers design recommendations (112 pages, \$20).

Two additional handbooks in the Environmental Land Planning Series are scheduled for release later this year: Cluster Development Strategies for Urban Watersheds, and Residential Street Strategies for Urban Watersheds.

Copies of the Environmental Land Planning Series handbooks are available from the Metropolitan Washington Council of Governments, 777 North Capitol Street, NE, Suite 300, Washington, DC 20002-4226, (202) 962-3200, Fax: (202) 962-3201. Site Planning for Urban Stream Protection, the first handbook in the series, is also available from the Center for Watershed Protection (\$35), 5737 Colesville Road, Suite 300, Silver Spring, MD 20910, (301) 589-1890, Fax: (301) 589-8745.

"Partners for Wildlife" Recognized by SER

An innovative federal program that links private landowners who want to restore wildlife habitat on their lands with expertise and funding from the U.S. Fish and Wildlife Service (FWS) has received the Society for Ecological Restoration's (SER) Service Award for 1996.

Almost 14,000 non-Federal landowners have worked with the FWS *Partners for Wildlife* program to restore a broad range of wildlife habitats since it began in 1987. SER grants its Service Award to acknowledge individuals and organizations that have dedicated their time and skills to advance ecological restoration. The award was presented at SER's annual conference at Rutgers, The State University of New Jersey.

"*Partners for Wildlife* is a win-win approach to habitat conservation for the U.S. Fish and Wildlife Service and private landowners," John Rogers, the agency's acting director, said. "Participants in this voluntary program receive financial backing for restoration on their lands that they couldn't afford on their own. They also receive technical assistance that can include design consultations, advice on soil and water quality improvement, and grazing

management."

Partners for Wildlife restoration sites must be maintained for a minimum of 10 years. During that period, project participants can continue using their land and receiving the economic benefits from their habitat restoration efforts. "Not surprisingly, *Partners for Wildlife* is one of our most popular programs," Rogers said. "We have many more people interested in working with the Service than we have funds to provide."

According to Rogers, program priorities emphasize projects that will protect habitat for species that are or may be placed on the Federal endangered species list. They also target habitat for migratory birds and anadromous fish, including salmon.

"By protecting the habitat of plants and animals before it is too late, we hope to prevent the need to list many species as endangered or threatened," Rogers said. Last year, 85% of the partnership projects we set up in the western United States improved habitat for listed or candidate species."

Since its inception, *Partners for Wildlife* has provided funding to restore 310,000 acres of wetlands, including northeastern bogs, southeastern bottomland hardwoods, and southwestern ciénegas; 40,000 acres of prairie grassland; 600 miles of streamside wildlife habitat; and 50 miles of instream wildlife habitat.

"Opportunities for creative partnerships are as diverse as the different habitats we've restored," said Steve Forsythe, chief of the Service's Division of Habitat Conservation. "Restoration techniques include everything from letting Mother Nature do all the work to complex stream restoration projects that involve the latest bioengineering techniques."

Partnership projects are often the result of cooperative efforts with other Federal, state, and local government agencies as well as private organizations, schools, and businesses. These groups often provide additional financial and technical resources toward restoration. "Frequently community groups, including conservation districts, Scout troops, students, and service organizations, help provide labor. This cooperative element helps teach people about the importance of restoring fish and wildlife habitat. What's more, participating is often just plain fun," Forsythe said.

For additional information about the *Partners for Wildlife* program, contact U.S. Fish and Wildlife Service, Division of Habitat Conservation, Branch of Habitat Restoration, 4401 N. Fairfax Drive, Room 2161, Arlington, VA 22203.

Ecological Sewage Treatment

Marine biologist John Todd has designed an ecological system that "helps nature solve manmade waste problems in an attractive environment." Todd's "Living Machines" employ "complementary communities" of trees, plants, snails, fish, bacteria, algae and microorganisms to feed on waste, "duplicating in an enhanced form the way natural marshes and ponds work."

The Living Machines, produced by Todd's Falmouth, MA-based Ocean Arks International, treat everything from raw sewage to high-strength organic waste streams like those produced by the food-processing industry. About 20 of the systems are operating now in several US states, the UK and Australia. The technology can treat waste to "advanced waste-water standards." However, all the current industrial applications involve recycling the treated

water for non-drinking uses at the facilities where the system is operating.

Frank Moir of the consulting firm Proctor & Redfern, which installed a Living Machine at the Ontario Science Center, said the technology could be useful in unsewered rural areas that have overloaded septic-tank systems or in communities with sewage-treatment systems that need to be expanded.

Source: Greenwire Vol. 6, No. 25

Green Economics

The W.S. JOURNAL reports "more economists are warming" to the ideas of University of Maryland's Herman Daly, a former World Bank economist who contends "the world economy -- and global consumption -- must eventually stop growing if nature is to survive."

According to conventional economics, resource scarcity "doesn't matter in the long run" because it spurs conservation or substitution of less-scarce materials. But Daly argues that "in practice, this doesn't always happen because some resources, such as air, aren't priced at all" and others, like oil, are priced in ways that underestimate the possibility of shortage.

To avert economic decline, Daly



"ecological economics"

says nonrenewable resources "should only be depleted at a rate equal to the creation of renewable substitutes." He also calls for shifting taxes away from income toward resource use. Daly's theories "have inspired an academic movement" called ecological economics. But they "provoke skepticism from some eminent economists." Nobel laureate Robert Solow of MIT says he's "deeply suspicious" of Daly, "whom he considers an alarmist." The MIT Press rejected Daly's upcoming book even though it had commissioned it. An editor says an outside panel advised against publishing the book; Daly says that smacks of censorship. The book will be published in August by Beacon Press.

Source: Greenwire Vol. 6, No. 39

Corporate Philanthropy

The Nature Conservancy received \$1.82 million in corporate donations in 1993, the latest year for which data is available, making the group the second highest recipient of funding from Forbes 250 companies. Also in the top 10 among all groups getting donations from Forbes 250 firms was the World Wildlife Fund/Conservation Foundation, which received \$1.2 million.

A 1992 Conservation Fund survey found that an average of 4% of enviro groups' revenues came from business interests. And many environmental groups are actively seeking out more corporate donations, according to Terrence Scanlon of the Capital Research Center, a conservative group that tracks foundation giving.

These groups include: Conservation International, the Environmental Defense Fund, the Izaak Walton League of America, the National Audubon Society, National Wildlife Federation, Sierra

Club, Wilderness Society, World Resources Institute and the World Wildlife Fund.

Earth Share-Environmental Federation of America was formed in 1989 to raise money for environmental groups by collecting donations through companies' employee payroll deduction plans.

During its first five years, Earth Share collected nearly \$30 million, according to Jonathan Adler's recently released book "Environmentalism at the Crossroads." Participating companies include: Levi Strauss & Co., Mattel Inc., Mobil Corp., the New York Times Co. and Sears, Roebuck & Co.

Source: Greenwire Vol. 6, No. 31

WI/MI Property Rights Decisions

In a decision lauded by environmentalists, the Wisconsin State Supreme Court on June 3 ruled that Waukesha, WI has the right to rezone land for conservation purposes without compensating the landowner.

The court overturned a lower court ruling that favored Alfred Zealy, who contended that the city rezoned 8.2 acres of his 10.2 acre parcel for wetland protection in 1985 without just compensation. Zealy claimed the fair market value of the 8.2 acres was \$200,000 if developed but only \$4,000 as wetland; the city assessed the value of the total 10.2 acre parcel at \$81,000 before rezoning, \$57,000 after.

In backing Zealy, the state's 2nd District Court of Appeals said a government would have to "compensate the landowner for any resulting loss" if a compensable takings of land was found to exist. But the WI Supreme Court ruled the rezoning didn't deprive Zealy of all or

substantially all of the use of his land, so he wasn't entitled to payment.

The National Audubon Society, which joined other enviro groups in filing amicus briefs in support of Waukesha, said the case was important because the state Supreme Court based its decision on the value change of the whole 10.2 acre parcel, not just the value change in the 8.2-acre rezoned tract.

Audubon General Counsel John Echeverria said the court's decision undermined the view reflected in Sen. Bob Dole's (R/KS) property bill -- that takings claims should focus narrowly on the "affected portion" rather than the "parcel as a whole. According to Echeverria, "The court's decision makes it crystal clear that [Dole's bill] would be a radical departure from settled constitutional law".

In the meantime in Michigan a Court of Appeals recently ruled that the state Department of Natural Resources (DNR) must pay \$5.2 million to several landowners for denying them the right to build a nightclub and restaurant on land protected under the state's Wetlands Act.

The court agreed with a 1993 decision by the state Court of Claims and found that the DNR action represented "an unconstitutional taking." The court said MI must pay the property owners what the land would have been worth if the government hadn't taken it.

The decision was the first time the appeals court ruled under the Wetlands Act that the state government took property without just compensation, according to Michigan Assistant Attorney General Kevin Smith.

Source: Greenwire Vol. 6, No. 27 and 38

Local Property Rights Setback

In a "major setback" for sagebrush rebels claiming local authority over U.S. lands, a federal court in Nevada has ruled that only the federal government has a clear title to public lands.

The decision rejected a claim by officials in Nye County, NV, that the county had authority to control U.S. Forest Service lands within its borders. The ruling "knocks out the legal basis" for a number of similar ordinances that have been passed in nearly 35 counties across the West. Such measures "have been used to disregard federal law and in some cases, intimidate federal employees." The judge rebuked nearly every one of the issues brought by Nye County's lawyers.

Nye is one of dozens of counties that have challenged Federal control of local lands in recent years. Nye County Commissioner Dick Carver had authorized the bulldozing of a closed road in the Toiyabe National Forest and had threatened to prosecute federal officials for carrying out federal law as part of his campaign for county sovereignty.

Hailing the decision, Attorney General Janet Reno said public lands are "owned by all Americans, to be managed by the United States. That's the rule of law. The court made it clear that Nye and other counties are no exception to this rule".

Some Nevada ranchers have however vowed to resist federal control of public lands and have promised to appeal the ruling. Several county movement leaders said "they will now redouble their efforts" to get Congress to limit regulators' power. Nye County Commissioner Dick Carver said, "We got what we wanted. We had to take an aggressive stance in order to get our seat at the table ... and now, they are listening to us".

In the meantime, farmers have paid back less than \$1 billion out of \$7.1 billion they owe the feds for Western water projects, according to a General Accounting Office report released in late July. Overall, the GAO study shows the federal government has spent \$21.8 billion on water projects in 17 Western states. Farmers were supposed to reimburse the government less than half the total amount, but through September 1994, farmers have repaid only \$945 million, or about 13%, in subsidized water rates.

Representative George Miller (D/CA), the ranking minority member on the House Resources Committee and a "leader" in efforts to restructure water distribution in the West, will use the study to push a bill that would require farmers to repay the full cost of new irrigation projects. But Jason Peltier, manager of the Central Valley Project Water Association, said cutting federal subsidies "in many, many cases means the water would be unaffordable."

Source: Greenwire Vol. 5, No. 213, and 214, and Vol. 6, No. 62

Wise Use Dealt Blow By Local Opposition

"Just when the wise use movement seemed to be at full flood" thanks to strong congressional GOP support of its agenda, the crusade seems to have "hit a wall" across the West, where "little brush fires of opposition" have started to flare



"wise use' vs common sense"

in recent months.

Wise use advocates tout local control "and handcuffing the regulators." But in some cases the locals don't seem to share the wise use agenda and "are not playing by the script."

One such example is a group of loggers and enviros who are meeting in an ID coffee house to find a way to reintroduce the grizzly. Dan Johnson, who represents loggers said, "We aren't trying to fit into someone's political scheme. Our goal is grizzly bear recovery, but included in that is a way to keep our jobs." Such talk has "infuriated" Representative Helen Chenoweth (R/ID), who has vowed to "quash" the efforts of the loggers, whom she has likened to prey lying down with a predator before a kill.

Other GOP members of Congress have found local adversaries. GOP supporters of wolf reintroduction in Yellowstone last year worked with Democrats to raise \$40,000 to keep the program on track after Senator Conrad Burns (R/MT) cut its funding. And neighbors of Representative Rick Pombo (R/CA), one of the main forces behind GOP moves to rewrite the Endangered Species Act, are opposing his efforts.

Merlin McColm of Elko, NV, a self-described "Gingrich Republican," who last year went to court to force ranchers who use U.S. Forest Service lands to meet certain enviro standards said, "[The] party wishes I would go away. But there are a lot of people out there just like me, and we aren't going away."

Some observers say GOPers misread the sentiments of rural Westerners. Phil Brick of WA-based Whitman College in 1994 conducted a poll of 1,250 voters in the "wise use stronghold" of Hell's Canyon, OR, and found that 66% said land development should be restricted

even if it harms individual property owners. Such results suggest that Westerners "favor" a mainstream enviro agenda even if they "despise" the liberals "who espouse it."

As a result of these and similar polls, House Speaker Newt Gingrich (R/GA) has taken increasingly greener stances in recent days, angering wise use leaders in the process. But wise use "guru" Ron Arnold remains optimistic that his movement will eventually triumph, saying it may take three full election cycles to dismantle major enviro laws.

Source: Greenwire Vol. 6, No. 46

Young Americans Rank Environment Among Top Problems

Forty-seven percent of Americans aged 18 to 29 consider environmental problems to be among the "most important problems" facing the U.S., according to a Newsweek poll released on June 22. Another

44% say the environment is "important, but not a most important problem." Only 9% say the environment is "not too important."

Princeton Survey Research Associates interviewed 380 Americans aged 18 to 29 from May 1-5. Margin of error is +/-6%. A comparison between this poll and a January 1996 Knight-Ridder poll of registered voters of all ages indicates that the general public is less concerned about environmental problems than young adults. Only 36% of the general public rank the environment among the most important problems, and 16% consider it "not too important".

Source: Greenwire Vol. 6, No. 39

Religious Environmental Activism

Increased activism may help turn the tide against pollution and environmental destruction, world religious leaders said on July 1 as

Meetings of Interest

August 13-16: The DELTA: Connecting Points of View for Sustainable Natural Resources. Cook Convention Center, Memphis, TN. Contact: National Association of Conservation Districts, Delta Conference, 509 Capitol Court, NE, Washington, DC 20002, (202) 547-NACD.

August 15-19: International Conference on Wetland Systems for Water Pollution Control, Vienna, Austria. Contact: ICWS, Vienna 1996, Attn: Mrs. Eva Brauman, Nussdorfer Laende 11, A-1190, Vienna Austria.

August 25-29: 126th Annual Meeting of the American Fisheries

Society, Dearborn, MI. Contact: Deborah Feldpausch, MI Dept. of Natural Resources, Fisheries Division, P.O. Box 30446, Lansing, MI 48909, (517) 373-1280, FAX (517) 373-0381.

September 22-28: INTECOL V International Wetlands Conference, University of Western Australia, Perth. Contact: UWA Extension Conference and Seminar Management, University of Western Australia, Nedlands, Perth 6907; 619 380-2433; FAX 619 380-1066; e-mail: uwext~uniwa.uwa.edu.au

September 22-25: Yesterday's Investment, Tomorrow's

they opened a week-long conference in Turkey.

Ecumenical Patriarch Bartholomew I, the leader of Orthodox Christians, urged his Anglican, Roman Catholic, Methodist, Jewish and Muslim colleagues to work together to preserve the environment. Bartholomew praised young people for leading the fight for the environment and compared cooperation on "ecological realities" to "the sanctity of prayer." Pope John Paul II said the conference could build "understanding of the wonders of God's creation and of our responsibility to care for [His] work."

President Clinton, in a message to the religious leaders, urged them to "move beyond mere awareness" of environmental problems and toward "active and extensive efforts" to address them. The conference was also cosponsored by Prince Philip of the United Kingdom.

Source: Greenwire Vol. 6, No. 47

Protection: A Look at the Condition of Small Watershed Improvements in the U.S.. Oklahoma City, OK. Contact: National Watershed Coalition, 9150 W. Jewell Avenue, Suite 102, Lakewood, CO 80232. (303) 988-1810.

September 22-26: 32nd Annual Conference and Symposium on GIS & Water Resources, Fort Lauderdale, FL. Sponsored by the American Water Resources Association and others. Contact: American Water Resources Association, 950 Herndon Parkway, Suite 300, Herndon, VA 20170-5531. (703) 904-1225. Fax: (703) 904-1228. E-Mail:

awrahq@aol.com.

October 22-24: National NPS Pollution Information/Education Conference, Chicago, IL. Sponsored by Illinois Environmental Protection Agency, in cooperation with USEPA and the Northeastern Illinois Planning Commission. The conference will focus on providing examples of successful outreach programs and materials dealing with nonpoint source pollution. Contact Christy Trutter, Illinois EPA, Bureau of Water, 2200 Churchill Road, P.O. Box 19276, Springfield, IL 62794-9276. (217) 782-3362. Fax: (217) 785-1225.

October 23-26: 23rd Annual Natural Areas Conference and 15th North American Prairie Conference, Pheasant Run Resort

and Conference Center, St. Charles, IL. Contact Karl Becker, (217) 785-8774.

November 15-17: Urban Streams Conference, Arcata, CA. Sponsored by the city of Arcata, the conference will include sessions on treating streams in urban areas and working with the natural properties of streams. Contact Susan Schramm, Conference Coordinator, Environmental Services Department, City of Arcata, 736 F Street, Arcata, CA 95521. (707) 822-8184. E-Mail: creeksconf@aol.com.

January 14-16, 1997: 1st Annual Conference on Natural Resources of the Missouri River Basin. A multi-disciplinary conference is being established to provide a

forum for information exchange between researchers and resource managers on issues related to the stewardship, ecology, and management of the Missouri River mainstem, floodplain and tributaries. Contact: Mark Lastrup, USGS-BRD, Midwest Science Center, Route 2, 4200 New Haven Road Columbia, MO 65201, (573) 875-5399 X1703, E-mail: mlastrup@msc.nbs.gov

July 1997, III International Symposium on Sturgeon, ENEL Training Centre, Piacenza, Italy. Contact: Dr. P. Bronzi, ENEL spa - CRAM via Monfalcone, 15 - 20132 Milan (Italy) phone: + 39-2 - 72243412 or 3452, FAX: + 39 - 2 - 72243496, E-mail: bronzi@cram.enel.it.

Congressional Action Pertinent to the Mississippi River Basin

Agriculture

S. 1822 (Harkin, D/IA) to permit the Agriculture Secretary to waive the prohibition on the termination of conservation reserve contracts for certain lands.

H.R. 3544 (Bryant, R/TN) to allow for immediate haying and grazing on certain lands enrolled in the Conservation Reserve Program in Tennessee.

Forests

S. 1590 (Murray, D/WA) "Public Participation in Timber Salvage Act of 1996" to repeal the emergency timber salvage sale program and for other purposes.

S. 1595 (Bradley, D/NJ) "Restoration of Natural Resources Laws on the Public Lands Act of 1996" to repeal the emergency timber salvage sale program.

S. 1647 (Pressler, R/SD) amends the Forest Land Policy and

Management Act to provide that forest management activities shall be subject to initial judicial review only in the United States district court for the district in which the affected land is located.

H.R. 1089 (Cremeans, R/OH) ensures that acquisition of lands for inclusion in the National Forest System does not result in a loss of tax revenue to the affected county.

H.R. 1439 (Metcalf, R/WA) amends the National Forest Management Act of 1976 to require that the Forest Service timber sale program be financed only by receipts from the sale of timber under the program.

Government Affairs

S. 1001 (Glenn, D/OH) reforms the regulatory process, providing for cost-benefit analysis risk assessment of major rules, and calls for a review of existing rules.

H.R. 2500, (Michael Oxley R/OH) amends the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

H.R. 2827 (Saxton R/NJ) consolidates and improves governmental environmental research by organizing a National Institute for the Environment.

H.R. 3048 (Edwing, R/IL), "Regulatory Flexibility Amendments Act of 1996."

H.R. 3093 (Franks, R/CT) amends the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to establish a brownfield cleanup loan program.

H.R. 3105 (Wolf, R/VA) amends the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to exempt certain state and local redevelopment boards or commissions, and fresh start

users of facilities purchased from those boards or commissions, from the liability under that act.

H.R. 3214 (Franks, R/CT), to amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to establish a brownfield cleanup loan program.

Parks

Senate Energy Committee on June 19 approved S. 1703 to provide the National Park Foundation a greater ability to raise funds from individuals, foundations and corporations to help repair and preserve national parks.

H.R. 1846 (Richardson, D/NM) establishes the Yellowstone Headwaters National Recreation Area within Montana's Gallatin and Custer National Forests

H.R. 3317 (Williams D/MT) to establish the Yellowstone River Valley Heritage Area in Montana, North Dakota, and Wyoming.

H.R. 3318 (Williams, D/MT) to establish the Southwest Montana Heritage and Recreation Area in the state of Montana.

Public Lands

S. 93 (Hatfield, R/OR) amends the Federal Land Policy and Management Act providing for ecosystem management on public lands. Referred January 4 to Committee on Energy and Natural Resources.

S. 518 (Thomas, R/WY) limits federal acquisitions in states where 25% or more of the land is owned by the United States.

S. 1844 (Murkowski, R/AK) to amend the Land and Water Conservation Fund Act to direct a study of the opportunities for enhanced water based recreation and for other purposes.

Senate Energy Committee on June 19 approved S. H.R. 238 to provide for the protection of wild horses in the Ozark National Scenic Riverways, Missouri, and prevent the removal of such horses.

Senate Government Affairs Committee on June 27 held a hearing on proposals to improve the management and organization of federal natural resources and environmental functions

H.R. 2107 (Hansen, R/UT) amends the Land and Water Conservation Fund Act of 1965 to improve the quality of visitor services provided by federal land management agencies through an incentive based recreation fee program.

H.R. 3198 (Calvert, R/CA) to reauthorize and amend the National Geologic Mapping Act of 1992, and for other purposes.

H.R. 3619 (Campbell, R/CA) to provide off-budget treatment for the Land and Water Conservation Fund.

H.R. 3752 (Young, R/AK) a bill to preserve the sovereignty of the United States over public lands and acquired lands owned by the United States, and to preserve state sovereignty and private property rights in non-federal lands surrounding those public lands and acquired lands

Refuges

S. 1013 (Conrad, D/ND) authorizes the Interior Secretary to acquire land for the purpose of exchange for privately held land for use as wildlife and wetland protection areas.

H.R. 1675 (Young, R/AK) improves management and establishes purposes of the National Wildlife Refuge System. House on April 24 passed by a 287-138 vote.

H.R. 2679 (Barrett, R/NE) revises the boundaries of the North Platte National Wildlife Refuge

Executive Order 12996 issued by President Clinton on March 25 outlining the mission and purposes of the National Wildlife Refuge System (3/28 Federal Register, p. 13657).

Rivers

H.R. 1260 (Johnson, D/SD) ensures equity in and increased recreation and economic benefits from the Missouri River system.

H.R. 1331 (Furse, R/OR) creates a voluntary non-regulatory technical assistance and grants program within the Natural Resource Conservation Service's existing Small Watershed Program.

H.R. 2939 (Gunderson, R/WI) provides for a Congressionally authorized test of the Mississippi Interstate Cooperative Resource Agreement in the Mississippi River Basin. Resource Committee held a hearing on May 9.

Takings

S. 605 establishes a uniform system for protecting property rights and compensating landowners adversely affected by regulations. Approved for floor action on Dec. 21.

H.R. 971 (Wyden, D/OR) ensures that homeowners have access to information and opportunities to comment on actions that may decrease home values, and establishes a compensation program for development that produces pollution or otherwise impacts home values.

Water and Wetlands

S. 626 (Hatfield, R/OR) amends the Watershed Protection and Flood Prevention Act establishing a technical assistance and grant program for waterways restoration.

S. 639 (Warner, R/VA) authorizes civil works programs for the Army Corps of Engineers which preserves the navigation of channels and harbors and provides for flood control and storm damage reduction.

S. 1601 (Levin, (D/MI) to amend the Federal Water Pollution Control Act to extend the deadline for and clarify the contents of the Great Lakes health research report, and for other purposes.

S. 1620 (Lautenberg, D/NJ) amends the Water Resources Development Act of 1986 to provide for the construction, operation, and maintenance of dredged materials.

S. 1660 (Glenn, D/OH) to provide for ballast water management to prevent the introduction and spread of nonindigenous species into the waters of the United States, and for other purposes.

H.R. 961 (Shuster, R/PA) reforms and reauthorizes the Clean Water Act. Passed the House May 16, 1995.

H.R. 1132 (Oberstar, D/MN) amends the Clean Water Act providing for improved non-point source pollution control.

H.R. 1262 (Pallone, D/NJ) amends the Clean Water Act improving enforcement and compliance programs.

H.R. 1268 (English, R/PA) establishes a comprehensive program for conserving and managing wetlands.

H.R. 1438 (Lowey, D/NY) amends the Clean Water Act to provide funding to the states for estuary conservation.

H.R. 2940 (Hayes R/LA) entitled "Deepwater Port Modernization Act."

H.R. 3112 (Pallone, D/NJ) to amend the Water Resources Development Act of 1992 relating to sediments decontamination technology.

H.R. 3113 (Pallone, D/NJ) to amend the Water Resources Development Act of 1986 relating

to cost sharing for creation of dredged material disposal areas, and for other purposes.

H.R. 3152 (Baker, R/CA) "Wetland Creation and Improvement Act."

H.R. 3217 (LaTourette, R/OH) to provide for ballast water management to prevent the introduction and spread of nonindigenous species into the waters of the United States, and for other purposes.

H.R. 3563 and 3692 (Shuster, R/PA) provides for the conservation and development of water and related resources to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States.

Source: Land Letter, Vol. 14, Nos. 17, 20, 24, 33 and Vol. 15, No. 2, 6, 11, 14 and 18; and NOAA Legislative Informer, September 1995, Issue #15



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River Crossings

NATIONAL RIVER SURVEY

Volume 5

September/October 1996

Number 5

Gulf Hypoxia Problem May Have Midwest Link

According to Gulf of Mexico scientists, a large near shore region of the Gulf west of the Mississippi River delta is suffering from severe seasonal oxygen deficiency. Commonly referred to as the "Dead Zone" this area (sometimes as large as 6,000 mi²) is more correctly termed the "hypoxia zone."



Dissolved oxygen in the hypoxia zone has dipped to less than 2 ppm during periods from as early as February to as late as October. During these times mortality of benthic organisms is extremely high.

Gulf scientists have shown a relationship between Mississippi River flow, river-borne nutrients,

plankton productivity, and bottom water hypoxia; with the size and occurrence of the hypoxic zone being related directly to the magnitude and timing of Mississippi River discharges. Nutrients discharged from the Mississippi River are believed to create the huge planktonic algal blooms which consume almost all available oxygen when they die and decompose. In late summer 1993, following the "Midwest Flood" the hypoxic zone covered a record 6,000-7,000 mi².

Fertilizer nitrogen, accounting for as much as 56% of the nutrient enrichment, is believed to be

the primary culprit causing the plankton blooms. Phosphorous does not seem to be a major contributor. In addition to fertilizers, animal and municipal waste discharges may account for up to 36% of the enrichment. Sources and relative amounts of nitrogen eventually reaching the gulf are: Upper Mississippi River above the Missouri River confluence - 31%; Missouri River - 11%; Ohio River - 22%; central Mississippi River - 8%; Lower Mississippi River - 23%; and White and Arkansas rivers - 6%. Estimated overall nitrogen input to the Gulf is about 1.5 million metric tons/year.

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Gulf scientists believe that the midwest is the major nitrogen contributor, but farm interests are skeptical. Figures stating that 56% of the nitrogen originated from farm fertilizer compared to municipal and animal sources (36%) are being criticized. Scientists admit that these proportions are based on assumptions and that a systematic examination of midwest water quality data is needed.

If the midwest is a major contributor to the gulf hypoxia problem, then it must also be a major player in any solution. Up to now practically all funding and emphasis has focused in the gulf and surrounding states. The challenge now is how to motivate midwest interests to participate in further study and problem solving. This will be no easy task since there is presently no funding available for midwest agency involvement or incentives for agricultural participation.

As a first step in this effort, a high level meeting of federal agency directors and staff was held in Washington, D.C. on August 1 to "...reinforce and advance existing interagency partnerships through joint efforts and implementation activities for addressing the oxygen-depleted zone (hypoxic zone)...." Representatives from the USEPA, U.S. Departments of Interior and Agriculture, Assistant Secretary of the Army, National Marine Fisheries Service, U.S. Geological Survey, and others were told by the Gulf of Mexico Program partners that their commitments were needed to address the hypoxia problem. The group reached a consensus that 1) research and monitoring (is needed to) continue to describe causes and examine potential solutions, and 2) existing programs that may help remedy the problem need to be identified.

The group plans to meet again

this fall to identify focus areas and to examine specific programs that may provide benefits. For additional information the Gulf of Mexico Program can be reached through their web site at <http://pelican.gmpo.gov>.

Source: UMRCC Newsletter, July/August 1996.

EPA To Set GA Pollution Limits

A federal judge on August 30th ordered the USEPA to set pollution limits for hundreds of contaminated streams and rivers in GA. U.S. District Judge Marvin Shoob said if the GA Environmental Protection Division (EPD) refuses to implement steps necessary to protect the

waterways, then USEPA must take away the state's authority to enforce the Clean Water Act.

Under the ruling, the USEPA must set pollution limits for the Chattahoochee and Flint rivers by June 1997. Cleanup work on all waterways must be completed by July 2000. The ruling could halt any new federal discharge permits in the state and undermine or cause revocation of many of the 1,100 permits already granted.

Douglas Haines of the Georgia Center for Law in the Public Interest, which filed the suit in 1994 along with the Sierra Club Legal Defense Fund, called the decision "a tremendous victory for all Georgians and for Georgia's environment." But Alan Hallum of the EPD's water quality branch said the state would need 10

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
(MICRA)
P.O. Box 774
Bettendorf, IA 52722-0774

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years to meet the ruling, unless the USEPA stepped in to help.

"Shoob's rulings are being closely monitored by environmentalists and regulators in at least 17 other states, where similar suits are pending".

Source: Greenwire Vol. 6, No. 88

TX/NJ Pipeline Hazardous

In the wake of a June 26th pipeline rupture that poured almost one million gallons of diesel fuel into the Reedy River in SC, the federal Office of Pipeline Safety (OPS) has declared Colonial Pipeline Co.'s entire 1,530-mile pipeline from TX to NJ hazardous, and directed the firm "to take corrective steps that could cost as much as \$10 million."



Agency officials ordered Colonial to inspect for tiny cracks along 600 miles of pipeline, including portions in five SC counties that have experienced multiple ruptures. The pipeline has burst four times in 17 years along a 10-mile stretch in Greenville County, SC, spilling over 2.2 million gallons of fuel. The June 1996 Reedy River spill killed more than 34,000 fish and already has cost the firm \$5.9 million in cleanup expenses.

The OPS move marks the first time the agency has "deemed an entire pipeline a hazardous facility." The action followed reports in the *Greenville News* that federal officials failed to fine Colonial or force it to take major

safety precautions after previous ruptures. The *Greenville News* also reported that Colonial knew the pipeline was prone to defects when it was installed in the early 1960s.

Source: Greenwire Vol. 6, No. 77

EPA Scientist Supported by Public Defender Group

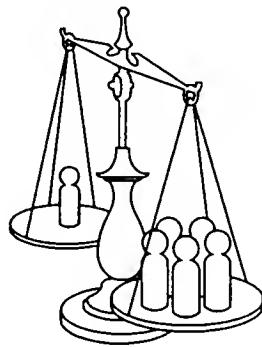
Four organizations representing citizens organized to stop toxic pollution in poor communities are mounting a national campaign to support a scientist on the staff of the USEPA, whose work in KY was terminated by state officials.

The scientist, Brian Holtzclaw an environmental engineer, worked for KY from December, 1992 to December, 1994 on loan from USEPA to the KY Department of Environmental Protection (DEP). When KY refused to renew Holtzclaw's contract in 1994, he filed a complaint with the U.S. Department of Labor (DOL), under federal whistleblower provisions in six environmental protection laws. He claimed he was terminated because he exposed health hazards caused by pollution from industries that wield political power in KY.

DOL Administrative Law judge Ainsworth Brown recommended that Holtzclaw's complaint be dismissed. The recommendation now goes to U.S. Secretary of Labor Robert Reich for final decision. "This case is critical to local groups we work with throughout the Southeast, and to all those fighting pollution across the country", said Connie Tucker, Executive Director of the Southern Organizing Committee for Economic & Social Justice (SOC). "Communities of color and working-class whites are fighting for their lives against industrial pollution, so it is essential that we have scientists like Holtzclaw who have the courage to give us accurate information. In KY,

Holtzclaw was simply carrying out EPA's mandate to protect the people's right to know."

Joining in the campaign supporting Holtzclaw are three community-based organizations that he assisted: the OH Valley Environmental Coalition (OVEC) in the Tri-State area of KY, WV, and OH where major pollution problems are caused by an Ashland Oil refinery; the Coalition for Health Concern in the Calvert City area of western KY with multiple chemical industries and cancer rates far above the national average; and the Justice Resource Center, based in Louisville, which is coordinating a citizens' drive to deal with an industrial complex that each year dumps 184 million lbs. of chemical pollution (6.7 million of them highly toxic) on African American and low-income white communities.



Holtzclaw's original complaint was filed against USEPA as well as KY. However, USEPA awarded him a \$20,000 settlement, with a written agreement that he could continue to work on issues of environmental justice. Holtzclaw is now assigned to USEPA's Region 4 office in Atlanta, but the KY groups want him back in their state.

Holtzclaw's complaint maintained that reprisals from KY environmental officials began after he wrote three controversial documents:

- A report detailing his unsuccessful efforts to bring to

the Tri-State area USEPA's only environmental medicine physician, Dr. John Stockwell, to assist in screening for health hazards in the area affected by Ashland Oil's Catlettsburg, KY, refinery;

- A short memo requesting authorization to provide information on criminal and civil violations for a USEPA enforcement action against Ashland Oil; and
- An 83-page report documenting the need to conduct an environmental study before a chemical company was allowed to build two new plants near Kenova, WV, which is downwind from Ashland's refinery.

In his recommendation to the Secretary of Labor, Judge Brown ruled that Holtzclaw's documents were "protected activity" under whistleblower laws. However, he said KY was justified in refusing to renew Holtzclaw's contract because it had other "legitimate nondiscriminatory business concerns" about his work.

Tucker said that if Judge Brown's recommendation stands, it will have a "devastating chilling effect" on other state and federal employees, as well as those in private industry, who might want to expose "the dangers the public faces." "The whistleblower laws were written to protect the rights of employees," she said, "but also to protect our right as citizens to know the truth."

Contact: Southern Organizing Committee for Economic & Social Justice News Release, Auxiliary Office 3208 W. Broadway, Louisville, KY 40211, (502) 776-7874 or (404) 755-2855.

Source: SOC News Release, July 15, 1996.

Grazing Update

Advocates of grazing reform won an important procedural vote in the Senate on September 17,

when opponents failed to muster enough votes to table an amendment by Sen. Dale Bumpers (D/AR) to the \$12.7 billion Interior Department appropriations bill that would increase fees for ranchers who graze cattle on federal lands.

The amendment would raise federal grazing fees to the same level that states charge for the use of their lands. That translates to a rate hike of 300-400% for many ranchers. So-called family farmers, those non-industrial ranching operations that hold permits for less than 5,000 animal unit months (AUMs) would be exempted from the fee increase. An AUM is the amount of forage consumed by a cow and her calf in one month.



"Not only the House, which has a long history of opposing subsidized fees, but now also the Senate is on record as saying the status quo is unacceptable," said Johanna Wald of the Natural Resources Defense Council. "That is a sign of enormous progress."

Bumpers and other supporters say the rider targets only large corporations that own a significant number of "subsidized" permits. They argue these companies benefit from a kind of unsupportable corporate welfare under the current system.

Ranching interests and Western lawmakers argue, on the other hand, that such a steep increase in fees would drive many marginal

operations out of business. They say that federal lands are not as productive as other properties and should not cost as much to lease for grazing.

In the House an effort by Speaker Newt Gingrich and Reps. Sherwood Boehlert (R/NY) and Wayne Gilchrest (R/MD) to fashion a grazing compromise bill before the end of the session appears to have failed. If passed, that compromise would increase public participation in grazing decisions; allow ranchers and states to hold some grazing permits in an inactive status for conservation purposes; ensure the federal government's right to acquire water rights on rangelands, despite some state proposals to limit the feds' rights; and permit non-ranchers to make range improvements. A House GOP source said the compromise deal did not address grazing fees.

Environmentalists blasted the bill on its release and the Western lawmakers who would most reasonably benefit from ending the stalemate have not signed on, aides close to the negotiations said. Among interest groups, the National Cattlemen's Association and the International Association of Fish and Wildlife Agencies lent their support, but other key constituent groups did not. The bill's fate was sealed when it was learned that President Clinton found the Boehlert-Gingrich bill unacceptable and would veto it.

"I am not declaring victory yet," Wald said. "I will declare victory when the 104th Congress goes out of session and nothing that resembles the Domenici bill is passed as stand alone legislation or as part of any other legislation." Sen. Pete Domenici's (R/NM) industry-supported grazing bill has been fought by environmentalists since it was introduced last year.

In the meantime in OR, Governor John Kitzhaber (D) on August 16

met with farmers and ranchers to express his willingness to rally behind their fight against the "controversial" November 1996 ballot (Clean Streams) initiative on grazing. But, in return, Kitzhaber wants the groups to support other environmental measures that aim to clean up OR's streams and rivers.

Kitzhaber wants farmers and ranchers to support regulatory programs and increased spending on clean water, as well as a bond that would raise money for restoring streams and watersheds. The Clean Streams Initiative would prohibit livestock from entering damaged stream areas until ranchers have developed grazing plans to meet state water-quality standards. It also would allow citizens to bring lawsuits against violators.

Supporters say the measure is needed to protect streams where salmon, steelhead and other species are at risk. But landowners say the measure would force them out of business. Kitzhaber said if he fails to win industry commitment for his conditions, he will support the streams initiative. Kitzhaber said, "There is a right way to get there, and there is another way ... but we will get there one way or another".

Meanwhile, UT conservationists' attempting to create a "multiple-use showcase" for wildlife, ranching and energy in the Book Cliffs area of eastern UT face attacks on two fronts. A federal lawsuit filed by TX oil magnate and rancher Oscar Wyatt charges that the Bureau of Land Management (BLM) illegally allowed two environmental groups to retain grazing permits on two ranches they bought under the Book Cliffs Conservation Initiative. Wyatt, who in 1994 outbid conservation groups for a Book Cliffs ranch, also contends that the BLM allowed some grazing permits to be retired to "non-use,"

in violation of the 1934 Taylor Act, which was designed to encourage grazing. Environmentalists, including the Rocky Mountain Elk Foundation and the Nature Conservancy, are "furious" about the lawsuit.



The second attack comes from Uintah County officials and some energy industry reps who are afraid the project's emphasis on wildlife will restrict development of Book Cliff's oil, gas and tar sand resources. But the UT Dept. of Natural Resources, a partner in the conservation initiative, says the area can accommodate such uses.

Source: Greenwire Vol. 6, No. 67, 81, 91 and Land Letter Vol. 15, No. 25.

Creek Maintenance Certification Course for Farmers and Ranchers

A creek maintenance certification course, tailored to meet the needs of farmers and ranchers, has been developed as part of a CA watershed's 319 demonstration project. Laurel Graham-Holsman felt such a course was a logical complement to on-the-ground Best Management Practices (BMPs) like erosion control, rotational grazing, and riparian fencing. Graham-Holsman wanted to meet both the perceived needs of the farmers and the objective of reducing nonpoint source pollution through BMPs, so practical stream management training for landowners seemed to be the answer.

Decades of logging and agriculture on the highly erodible land of central CA's Pescadero-Butano Creek watershed had destroyed salmon and steelhead trout spawning areas, exacerbated flooding, and caused bank erosion. The Pescadero-Butano Creek Coordinated Resource Management and Planning Project aspired to reverse these changes, and public education was part of the plan.

Over seven or more years of drought, very low flows had deposited tons of sediment in the streambed. Trees growing out of the new mid-stream bars clogged the watercourse by catching still more sediment and debris. A severe storm had created a log jam, accumulating over 3,500 yds³ of debris, resulting in floods and badly eroded streambanks.

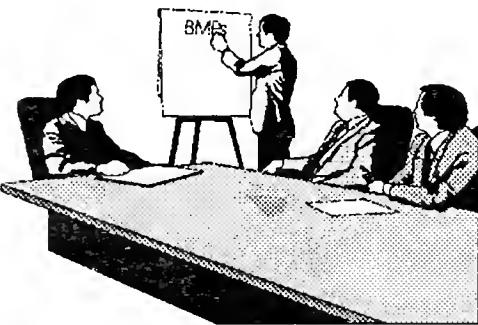
Farmers felt that if they had been allowed to "clean up" the creek, flooding and erosion would have been significantly reduced. They wanted to clear the creeks of debris, remove fallen trees, stabilize failing banks, or cut the trees on the mid-stream bars that were catching and holding huge logs coming down the creek. But uncertainty about acceptable practices made farmers wary about applying for permits to carry out maintenance activities.

Inspired by the Montana Forest Stewardship workshop developed by Bob Logan, Graham-Holsman came up with the *Creek Maintenance Certification Workshop*.

The pilot workshop, sponsored by the San Mateo County Farm Bureau, began with two three-hour classroom sessions to familiarize farmers with the watershed's natural history, problems, and appropriate BMPs. Discussions of permitting and work plan development led to preparation of documentation on real projects the farmers felt were needed. Each participant

completed property descriptions, identified resource problems, BMPs, costs, and resources; and produced a viable work plan, and an individual permitting packet.

The course culminated in an open-book exam and submission of the permitting packages. Farmers and ranchers completing the course were awarded certificates. According to Graham-Holsman, "The participants have developed a more integrated knowledge of the land and the treatments than most county planners or game wardens." The course also made permit applicants well aware of which activities are appropriate and which are not.



As a result of the course, almost 5 mi. of creek in the lower Pescadero and Butano Creek Watershed will be covered under management plans. Some of the planned activities require permits, while others do not. Plans included removing farm equipment from floodplains, topping or removing unstable trees from streambanks while still retaining an appropriate canopy, revegetating streambanks, planting willows, diverting runoff from fields, removing garbage from the stream, and seeding and winterizing farm roads adjacent to the stream.

The one gap remaining, according to Graham-Holsman, is permitting. She has been working with the state fish and game department to streamline permitting procedures

for those completing the course.

"Most grant programs require a public education or public information participation component," she said. "If doing the environmentally appropriate thing is not enough to motivate people, then the project director needs to find a value that will support learning new, different activities. In this case, private property rights were honored and combined with private property responsibility."

Contact: Laurel Graham-Holsman, Natural Resources Program Management, 20005 Lackman Loop, Frenchtown, MT 59834, (406) 626-2484, e-mail: mayasleca@aol.com.

Source: Nonpoint Source News Notes, June/July 1996, Issue No. 45.

Defending U.S. Rivers - One Watershed At A Time

In the U.S. and around the world, undammed, unpolluted, unchannelized, and unfettered rivers are fast becoming an endangered species. The U.S. is the second most dammed country in the world, with 5,500 large and 96,000 small dams. Of rivers in the U.S. longer than 1,000 km, only the Yellowstone remains undammed. Studies show that many of our rivers are too polluted to swim in, much less drink. In response to this assault grassroots groups in both rural and urban areas have taken on river battles big and small. Thousands of groups now claim responsibility for the health of their creeks, streams and rivers.

These grassroots river groups cover a wide range of river protection activities, from simply cleaning up trash to monitoring for pollutants; from improving habitat conditions to fighting dams. Although their work rarely receives attention beyond their

hometown newspapers, the incremental impact of their collective fight is growing. The following are examples of four of these groups and their activities:

Idaho Rivers United - With half the length of the Snake River already dammed, ID has a power surplus - yet still more dams are being proposed. In its six years of existence, Idaho Rivers United (IRU) has managed to stop ten dams on the Snake River and its tributaries. "Dams have killed what used to be a billion-dollar fishing industry and turned the Snake into a black hole," says IRU founder Wendy Wilson. "We have squandered our natural wealth on cheap hydropower, mostly to benefit multinational aluminum corporations."

IRU also works on cooperative planning, including working with hydropower developers to mitigate problems brought on by the dams. As is true for most grassroots groups, IRU occasionally finds itself fighting well-funded opposition and powerful misconceptions, as evidenced by the following statement by Keith Higginson, ID's director of water resources: "I wish farmers would use the most wasteful irrigation practices there are. To get the aquifer recharged, we need to spread all the water we can to fields, canals and barrow pits."

ID has 40 major watersheds, each facing a unique set of problems. As the organization has expanded its reach, IRU's staff of seven has put a greater emphasis on organizing local people to work on problems in their watersheds. Toward this end, IRU has devised a simple checklist as a first step for citizens interested in getting involved in river development projects.

WRI/CYCLE Creek Restoration - The Community Youth Council for Leadership and Education (CYCLE) and the Waterways Restoration

Institute (WRI) teamed up to create a program for inner-city high school students that teaches them the basics of creek ecology, restoration and landscaping while working to restore Wildcat Creek. The project was a response to the social problems kids face in Richmond and tough urban environments all over the country. Another problem, just as disturbing, is the disconnect between many young urbanites and their natural environment.

"One of the hardest challenges in the beginning is to get the kids to see the creek as a living system," says WRI's Moira McDonald. Field trips help them understand that waterways are integral to their community. A boat trip with the environmental group San Francisco Bay Keeper reveals the connections between creeks and the bay, while a trip to a wastewater treatment plant offers lessons on point- and non-point source pollution.

Adopt-A-Stream Foundation - This eleven-year-old group has created a number of successful stream restoration programs in its logging- and dam-ravaged home state of WA. Using its two-pronged approach of environmental education and stream restoration, the Adopt-A-Stream Foundation (AASF) has trained unemployed forest product workers to restore riparian habitat, and helped an elementary school bring salmon back to a local creek, among other projects.

AASF is working with five local, unemployed forest workers and commercial fishermen for a year-long training course in the techniques of habitat restoration. Funding this year is from WA Jobs for the Environment, the Department of Fish and Wildlife, and the WA State Department of Natural Resources.

This year's project will include

putting meanders back into a channelized stream with tractors and bulldozers; placing large debris in the stream, such as tree trunks and boulders; and replacing non-native trees with native vegetation. "The goal of the project is not limited to the work that takes place on the ground," says Tom Murdoch, Executive Director of AASF. "We also want to give trainees the tools and skills needed to finance, promote and market their skills as contractors in the habitat restoration business." At the end of the year, Murdoch would like to see the team function either as an arm of AASF or independently as contractors.



AASF has also published books for would-be creek restorers. Their latest, the well-illustrated *Streamkeeper's Field Guide* (1996), offers watershed inventory and stream monitoring methods in easily understood language.

Zuni Conservation Project - At the turn of the century the U.S. government built seven reservoirs on the Zuni River in tribal territory to encourage Zuni farmers to impound water and irrigate their land. Until that point, Zuni farmers had successfully adapted to their dryland environment, growing bountiful crops including corn, beans, and chilies. "The success of dryland farming was

due to the right kind of seed, the knowledge needed to bring the seed to bear, and a belief that it will work," says Jim Enote, project leader of the Zuni Conservation Project (ZCP).

Soon after the dams were built, a number of them failed. The water released from the dams changed the stream's base elevation, and subsequent upstream erosion destroyed thousands of acres of traditional Zuni farmland. An out of court settlement on a 1970s Zunis lawsuit against the government on this matter established the trust fund from which the ZCP was born.

The ZCP now has a staff of 60 including hydrologists, GIS analysts, sustainable agriculture specialists, range conservationists and biologists. All staff but one are Zuni and range from elders who know the traditional methods of dryland farming to young people with advanced degrees. Enote says this mixture of young and old, university-schooled and those schooled by the land is important because "we didn't want to increase the gap between science and humanity." The restoration crew is looking at both modern technical data and Zunis' pre-historic water use designs.

Contact: *Adopt-A-Stream-Foundation*, 600 128th Street, SE, Everett, WA 98208, (206) 316-8592; *Idaho Rivers United*, P.O. Box 633, Boise, Idaho 83701, (208) 343-7481, Email iru@igc.apc.org; *Waterways Restoration Institute*, 1250 Addison Street, Berkeley, CA 94702, (510) 848-2211; *Zuni Conservation Project*, P.O. Box 339, Zuni, NM 87327, (505) 782-2726, Email: jenote@aol.com. For a state-by-state listing of U.S. river groups, visit the IRN web site at: <http://www.irn.org>.

Source: *World Rivers Review*, Vol. 11, No. 3

NV River Restoration

A restoration project underway on NV's Truckee River is encouraging to scientists who are working to repair riparian systems through river management and controlled flooding.

The project, sponsored by the Nature Conservancy, has lowered the river's water level one inch per day during the last two summers, effectively creating a human-made beachhead on which



50,000 cottonwood saplings could colonize. The effort required releases from three dams, diversions at 26 points along the river, and mandates from three federal agencies.

Steward Rood, an expert on the West's streamside forests, says the Truckee restoration effort is "an international precedent-setting case study for both the science and management of rivers." The project goes farther than other restoration efforts, including the flooding of the Grand Canyon, in that the releases are designed to let the river run all summer as if there were no dams and diversions upstream.

In addition to replenishing streamside forests, the project

has allowed for more productive seasons for the endangered cui-ui fish, which lives in Pyramid Lake toward the end of the Truckee River.

Source: Greenwire Vol. 6, No. 79

Farmer Cooperators Leave Water In Northwest Rivers

This summer, for the first time in WA's history, irrigation water rights were transferred back to a river when Dan and Gloria Walker, of Cle Elum, WA, curtailed irrigation on their land. This was the first action in one of two novel Environmental Defense Fund (EDF) projects to transfer existing irrigation water rights back to rivers in the Pacific Northwest.

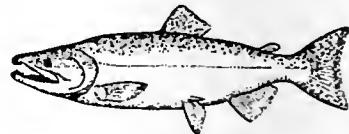
The precedent of adding freshwater improves the ecological health of the rivers, benefits salmon, steelhead trout, and other wildlife, and also generates additional hydroelectricity downstream, thereby reducing fossil fuel consumption and air pollution.

Thanks to this project, some of the most important water rights in WA's Yakima River Basin will stay in the Teanaway River, a Yakima tributary. This was once a premier spawning site for salmon and steelhead, a subsistence base for the Yakima Indian Nation. Irrigated agriculture, which began in the area in the 1890's, often drains critical parts of the Teanaway and has damaged the fish's reproduction.

A 1994 EDF report, "Restoring the Yakima River's Environment", recommended using voluntary transfers of water rights to help restore once-healthy habitats in the Yakima and tributaries such as the Teanaway. EDF economist Dr. Zach Willey worked with the U.S. Bureau of Reclamation, the WA Department of Ecology, and the Yakima Nation to find area farmers with high quality water

rights who were willing to leave more water in the river. Farmers would be paid for reducing their irrigation operations by beneficiaries, including agencies responsible for fish and wildlife recovery and the Bonneville Power Administration.

With the first water rights transfer completed by the Walkers, other farmers in the Yakima Basin and elsewhere in WA are watching to assess the attractiveness of such transactions.



chinook salmon

In another breakthrough EDF project, the largest irrigation district in OR's Deschutes River Basin has contracted to reduce water losses within its distribution system and leave the saved water in the Upper Deschutes River. A 1995 report, "Restoring Oregon's Deschutes River Basin", by EDF scientist Deborah Moore, analyst Adam Diamant, and the Confederated Tribes of the Warm Springs Reservation, identified such transactions as a key means of improving the Basin's degraded fish and wildlife habitats.

OR has had water conservation and transfer laws on the books for nearly a decade, but they were never used. This is because rights holders must estimate in advance how much water they will save and must permanently commit to transfer that amount, with no opportunity to measure in advance how much can actually be saved.

To overcome this obstacle, EDF's Willey proposed an option: when a rights holder commits up front to return some of his saved water to the rivers, allow him to retain ownership of the remaining saved water for five years of operating

experience. If he then elects to keep some of the remaining saved water, he must repay, with interest, part of the payment he received as an incentive for the transfer.

Willey worked with the Basin's seven major irrigation districts, the Confederated Tribes, the U.S. Natural Resources Conservation Service, and others to develop the pioneering contract recently signed by the North Unit Irrigation District. The OR Water Resources Congress, a statewide council of water districts, is promoting this type option throughout the state.

"Both of these pilot projects demonstrate possible technical and legal strategies that could be widely replicated in restoring Pacific Northwest rivers," Willey said. "EDF will continue to work to develop other innovative arrangements to finance river restoration projects."

Source: EDF Letter, Vol. XXVII, No. 5

Reduced Water Diversion Leads to Rebound

Two years after a landmark Nov. 1994 ruling that forced Los Angeles to reduce its diversion of water from streams flowing into CA's Mono Lake, the lake and about 100 miles of Sierra Nevada streams have been "transformed" in an example of "environmental renewal."

Since the CA Water Resources Control Board's decision -- hailed by Mono Lake Committee Exec. Dir. Martha Davis as the "first case of water being reallocated from urban uses for environmental purposes" -- Mono Lake has risen 6 ft., with 12 ft. to go until it reaches the level mandated by the ruling.

Los Angeles began diverting water from the Mono Lake region in 1941, causing the level of CA's

second-largest lake to drop 45 ft. by 1982. The diversion led to high salinity and wetlands loss that threatened the lake's wildlife along with its unique calcium carbonate tufa tower formations.

CA Deputy Attorney General Mary Schoonover says the Mono Lake decision set a precedent for Western water policy, expanding the public trust doctrine to include fishing, recreation, aesthetic and ecological values, as well as public access to navigable waterways.

Source: Greenwire Vol. 6, No. 65

Gunnison River Fish Ladder

A fish ladder now being operated full-time on the Gunnison River has provided a gateway for endangered fish to once again reach 50 mi. of upstream spawning and feeding habitat that had been out of reach for nearly a century. The Redlands Fish ladder was designed to help endangered Colorado squawfish and razorback suckers overcome two obstacles in the Gunnison River:

- the 12 ft. high Redlands Diversion Dam, which previously blocked the fishes' migration, and
- the effects of predation and competition from non-native fish.

The fish ladder has been used extensively by native fish. During a 24-hour trial run in June, an estimated 10,000 fish swam up the ladder. Now being operated full-time, the ladder has been used by about 6,000 fish. Although so far, no endangered fish have used the ladder on their own, U.S. Fish and Wildlife Service biologists conducted an experiment with six endangered razorback suckers and found that two of them successfully swam to the top of the passageway. Next year, the ladder will be operated during a complete spawning season, giving biologists a better opportunity to test its use by endangered fish.

To swim through the ladder, fish enter downstream and then swim up a 350 ft. U-shaped channel that wraps around one end of the Redlands Diversion Dam and leads to a "holding area at the top. The fish remain there until biologists sort the native and endangered fish from the non-natives, many of which feed upon and compete with endangered fish. To avoid giving the non-native fish an equal advantage, biologists return the non-natives downstream while releasing all native and endangered fish upstream.

Once above of the dam, endangered fish will be able to reach historic spawning areas and will find a river teeming with young native fish, one of the Colorado squawfish's preferred food sources. The Colorado squawfish and razorback sucker evolved in the Colorado River Basin more than 3 million years ago and have been called "living fossils."

Contact: Connie Young, (303) 936-2985, ext. 227

Zebra Mussels Causes Jeopardy Opinion

On August 30th the U.S. Fish and Wildlife Service (FWS) released a Biological Opinion to the Federal Highway Administration (FHA) stating that without precautions, construction of a bridge on the St. Croix River between MN and WI would jeopardize the existence of the endangered Higgins' eye pearly mussel and the winged mapleleaf mussel.

The Opinion, prepared as part of consultation procedures required under the Federal Endangered Species Act (ESA), states that harm to the endangered mussels would be primarily due to construction



barges inadvertently bringing zebra mussels into the St. Croix River. To allow the project to move forward while avoiding the likelihood of jeopardizing the existence of those species, the MN Dept. of Transportation and the FHA agreed to require rigorous decontamination of construction barges before being used in the St. Croix River. Construction of the bridge is tentatively scheduled to begin next spring.

The Higgins' eye pearly mussel is found in the Mississippi River from MN to southern IA. It is also in the Wisconsin and St. Croix rivers. Unfortunately, all the waters that support Higgins' eye have been contaminated by zebra mussels, except the St. Croix River. The winged mapleleaf mussel is even more critically endangered; it is found only in the St. Croix River.

Experts predict that zebra mussel infestation will cause, at a minimum, increased mortality at most mussel beds in the Upper Mississippi River. Experts also predict that neither the Higgins' eye nor the winged mapleleaf would survive over time if the St. Croix River becomes contaminated with zebra mussels.

Contact: Nick Rowse (612) 725-3548, Lynn Lewis (612) 725-3548, or Larry Dean (612) 725-3602

Zebra Mussels/Blue Green Algae Connection?

Offensive summer blooms of the potentially toxic blue-green algae, *Microcystis*, have returned to some Great Lakes waters, particularly to Lake Huron's Saginaw Bay and Lake Erie. According John Hageman of the Ohio State University's Stone Laboratory, Saginaw Bay experienced blooms in both 1994 and 1995, and in September 1995, Lake Erie's entire western basin was covered with what looked like "a thick slick of

grass-green paint". Nuisance *Microcystis* blooms haven't occurred since the 1970s and early 1980s, before the United States and Canada lowered phosphorus inputs to the Great Lakes.

The timing of the 1990s algal blooms and the arrival of the zebra mussel would seem entirely coincidental, given the mussel's reputation for filtering large quantities of plankton from the water column. "Since the zebra mussel's arrival, we hadn't seen, nor did we expect to see, any bloom of any kind of algae," said Alfred Beeton, director of the NOAA Great Lakes Environmental Research Laboratory (GLERL) in Ann Arbor. So the algal blooms are puzzling, given the zebra mussel's acknowledged role in producing the clearest water in decades in Lake Erie and Saginaw Bay.

However, Henry Vanderploeg, also of GLERL, may have found a connection between zebra mussels and the summer *Microcystis* blooms. Vanderploeg has observed zebra mussels selectively filtering and rejecting phytoplankton in a way that could both promote and maintain *Microcystis* blooms.

Using video equipment, Vanderploeg observed zebra mussel behavior monthly during the algal blooms. Although the mussels remained open and siphoning, they exhibited a definite distaste for *Microcystis*, expelling BB-sized blobs of these algae back into the water column, where they became resuspended. Vanderploeg speculates that these blobs of algal cells were uninjured and could continue to grow.

While the mussels seldom slowed their pumping rates, their actual feeding rate declined due to the amount of *Microcystis* spewed back into the water. In laboratory experiments using *Microcystis* from Lake Erie's 1995 bloom and a species of small laboratory-cultured

algae (*Rhodomonas*), Vanderploeg confirmed that the mussels could continue to select smaller algae for normal digestion while expelling *Microcystis*.

Because *Microcystis* may have a competitive advantage over other algae in conditions of high ammonium (the form of nitrogen excreted by the zebra mussels) it would be expected that fertilization of Saginaw Bay by zebra mussels would encourage *Microcystis*. But despite the high density of zebra mussels, Vanderploeg found nitrate concentrations (a form of nitrogen used by most algae) in the Bay to be 10-20 times higher than ammonium concentrations. Phosphorus, another element that might preferentially stimulate *Microcystis*, was excreted by the mussels at very low levels. Therefore, it appears that nutrient excretion by the mussels was not a major factor in promoting the *Microcystis* bloom.

In addition to the aesthetic drawbacks of blue-green algal blooms and potential food chain disruptions, biologists are concerned about the potential toxicity of *Microcystis*. The algae is known to be responsible for some bird and fish kills and to cause gastrointestinal distress to humans. "In fact," Vanderploeg said, "the algal toxins may be what is causing zebra mussels to reject *Microcystis*." Vanderploeg is continuing to examine this issue.

In the meantime as the zebra mussel continues to spread south from the Great Lakes, the Louisiana Sea Grant has developed a "Southern Region Zebra Mussel Newsletter" to document the spread. The newsletter offers information about new settlement sites and control experiences.

To receive copies of the free newsletter contact Marilyn Barrett-O'Leary, Louisiana Sea Grant, Louisiana State University, Baton Rouge, LA 70803-7507,

phone (504) 388-6451, email
moleary@lsuvm.snci.lsu.edu.

Source: Zebra Mussel Update No.
27, Great Lakes Sea Grant Network

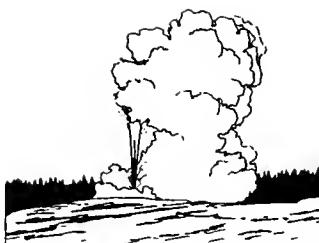
Yellowstone Update

Proclaiming that "Yellowstone is more precious than gold," President Clinton announced a deal in early August to block the proposed New World Mine near Yellowstone's MT border.

The "agreement in principle" with Crown Butte Mines Inc., provides for the government to swap \$65 million worth of federal land if the company drops its claim to some \$650 million worth of gold deposits. Lands to be swapped have not yet been specified, and federal officials would have up to a year to work that out with the company. Additionally, Crown Butte agreed to put \$22.5 million in an escrow account to pay for cleaning up waste from "mining activity that occurred before it took over the site".

Environmental concerns, who feared the mine's waste would have polluted the Clarks Fork of the Yellowstone River running into the park, "declared victory over the mining industry" with Clinton's announcement. But they cautioned that many details remain to be worked out, including finding alternative land acceptable to them and to Crown Butte. If the company is not satisfied with the proposal, "it can walk away from the agreement," said Robert Eakey of the Bozeman, MT-based Greater Yellowstone Coalition (GYC), which coordinated attacks against the mine. "There's a lot of negotiating to be done. We're not going to transfer an environmental liability to another part of the country."

Ian Bayer, president of TX-based Battle Mountain Gold, which owns a controlling interest in Crown



Butte, said he believed that reaching a preliminary agreement was the hardest step. Crown Butte President Joe Baylis said, "Nobody's walking away losing". Bayer wouldn't discuss where the alternate land might be, "or whether the government might swap mineral reserves instead." "In the end, Bayer said, "the company wants assets that they can realize and liquidate to cover losses".

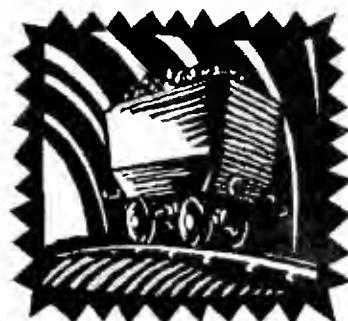
Crown Butte has already paid about \$37 million for exploration of the New World Mine. Additionally, Crown Butte Mines Inc. will now embark on the \$22.5 million effort to repair damages "wrought by mining the company had no part of." The cleanup will reduce acid and other pollution in streams flowing toward the park and the Clarks Fork of the Yellowstone River. Crown Butte will conduct the work near Cooke City, MT, where some streams are "as acidic as lemon juice" due to previous mining. The USEPA will oversee the work after involving state agencies, technical experts and the public in drafting cleanup options. Company officials want the cleanup to become "a showcase of the mineral industry's environmental sensitivity."

President Clinton said the deal will prevent what would have been "years and years of expensive and bitter litigation", while acknowledging that the deal will affect the area economy and cost hundreds of jobs. But he said, "We can't have mines everywhere, and mines that could threaten any national treasure like

Yellowstone". Clinton made a point, however, of stressing the industry's economic importance.

Environmental interests used the ceremony to emphasize that future threats like the one to Yellowstone were still possible because Congress has yet to reform the 1872 Mining Act, which critics say gives the federal government too little authority to stop mines not in the public interest, and allows the industry to exploit public resources without compensating the government.

Interior Secretary Bruce Babbitt agrees. A Department of the Interior News Release dated September 11, calls the antiquated 1872 Mining Law "...a poor return on the nation's natural resources". The release was made as Babbitt signed mining patents for claims in AZ and AK. Babbitt said, "Once again I'm being forced to give away the American public's hard earned heritage. Under the 1872 Mining Law, with the stroke of a pen, I must transfer 56 million dollars worth of copper for just five hundred dollars. That's five dollars per acre. That's the law. That's an outrage."



Further he said that, "With the strong support and leadership of President Clinton, we can pass a real mining reform that restores and protects our watersheds and that gives taxpayers a fair return on their rich national legacy. Let's end the giveaway right now," he said.

Clinton administration aides say

the White House persuaded Crown Butte to give up the New World Gold Mine after threatening to invoke federal wetlands regulations in the area where the mine's wastes would have drained. Should the deal proceed, "it would be the first such U.S. mining swap in recent memory." Industry observers speculated that TX-based Battle Mountain Gold Co., which bought a controlling interest in Crown Butte in March, may see the deal as an "easy way to shed a property that could have hurt its image." Meanwhile, "the White House's willingness to compensate the mining company shows that it does not want to further drive the [mining] industry abroad".

Some 60% of Wyoming voters want the federal government to stop the New World Mine, according to a poll released on August 9 by the National Parks and Conservation Association (NPCA). However, NPCA President Paul Pritchard "believes the agreement ... has only a 50-50 chance of success." Pritchard said the states involved and their congressional delegations were not part of negotiations. Yet "congressional approval ultimately will be needed for the deal to be consummated".

In a related matter, the House Resources Committee began hearings on Sept. 12 on a bill which would prevent United Nations (UN)-affiliated panels from designating federal lands as World Heritage Sites or Biosphere Reserves without congressional approval. The "primary target" of the legislation, sponsored by House Resources Committee Chair Don Young (R/AK) and Sen. Conrad Burns (R/MT), is the UN Educational, Social and Cultural Organization (UNESCO), which administers a global list of architectural, urban and natural sites of "universal significance."

The UN World Heritage program garnered national attention in

1995 when Yellowstone National Park, which has been on the list since 1978, was upgraded to "endangered" because of the proposed New World mine.

The House version of the bill (brought to the floor on Sept. 26) questions whether economic development would be allowed around heritage sites and, "more broadly," raises questions about the role of the feds and state sovereignty. But Nina Sibal, director of UNESCO's New York office, and one of those testifying on Sept. 12, said concerns about the designations being obstacles to local development are "a needless fear" since the designations have no effect on how the property is used.

Source: Greenwire Vol. 6, No. 71, 72, 74, 88, and 91

Red Tape Cut for Oil/Gas Drillers

"One day after pleasing environmentalists" by blocking the New World Mine near Yellowstone National Park, President Clinton signed a bill "cutting red tape" for companies drilling for oil and gas on federal lands. The new law, backed by the energy industry, simplifies the collection process for royalties on oil and gas extracted from federal lands, and requires the government to pay interest when producers overpay royalties.



According to the White House, the Congressional Budget Office estimates that the law will result in \$51 million in revenue to the federal government and \$33 million to states over seven years. The ceremony was "seen by the White House as a political counterweight" to Clinton's announcement that the New World Mine will not proceed.

Environmental protection and jobs brought by the oil and gas industry "are both ballot-box priorities" in the West. Clinton said, "Until today, regulatory red tape and conflicting court rulings had discouraged many companies from taking full advantage of these resources [on federal lands]."

Before signing the bill, Clinton met with gas and oil producers and energy lobbyists "to assure them that his administration is pro-industry and will fight" Republican attempts to eliminate the Energy Department.

Source: Greenwire Vol. 6, No. 73

State's Rights

In "another blow" to the West's "sagebrush rebellion," U.S. District Court Judge Lloyd George on August 28 ruled against 17-year-old NV statutes that claim state ownership of federal lands. George said the statutes violate the U.S. Constitution's supremacy clause, siding with a stipulation filed by the federal government that called the NV statutes "invalid and unenforceable."

The judgment follows George's March ruling that the federal government owns and has the power to manage public lands within Nye County, NV. That ruling nullified a 1993 Nye County ordinance that had claimed state and county authority over all public lands in the state.

Recently, the feds and Nye

County officials have been negotiating to resolve disputes over public lands, which make up 93% of the county. Nye County Commissioner Dick Carver, who defied U.S. Forest Service authority in April 1994 by bulldozing a road on federal land said, "We can't complain now with the federal agencies working with us like they are. This should have been going on for years".

Source: Greenwire Vol. 6, No. 91

Takings Update

After months of pledging to bring a property rights bill to the Senate floor before the end of the session, advocates admitted defeat when Senate Majority Leader Trent Lott (R/MS) pulled the controversial issue from the Senate calendar in mid September, effectively killing the measure for this year.

The takings bill, S. 608, was introduced by Sen. Bob Dole (R/KS) last year and was revised this summer by Sen. Orrin Hatch (R/UT) in response to concerns that the bill was too broad. The new measure focused specifically on land values and triggered compensation whenever a federal regulation, particularly environmental laws, diminished a property's value by 50%. Civil rights laws, including laws pertaining to the disabled, were exempted from the latest draft. None-the-less, bill supporters were unable to gather enough votes to overcome a certain filibuster, and Lott was unwilling to press the controversial issue so close to the election.

Environmental groups praised the majority leader's decision. "The defeat of takings in the 104th Congress represents a victory for conservationists and taxpayers across the country," said John Echeverria of the National Audubon Society. "It also signals a return to simple common sense

in congressional deliberations over future environmental policy."

Proponents of the bill pledge to bring it up next year; at least one Senate supporter is considering reserving S. 1 in a symbolic gesture to make takings the first issue of the 105th Congress. "It's a shame that its not going to come up this term but its an issue that is not going away and it merits being S. 1 in the next session," said David Almasi of Defenders of Property Rights.

In an interesting twist, Sen. Ron Wyden (D/OR) and John Warner (R/VA), a former supporter of the Dole bill, introduced new legislation designed to protect the property rights of the nation's 65 million homeowners. The bill, S. 2070, would allow property owners who experience a decrease in land value due to the issuance of a federal permit for development of a nearby property to sue the developer for damages.

"The issue has come full circle," said Echeverria. The bill, which also has no chance of passing, is symbolic in its attempt to recognize the interests of the vast majority of property owners who benefit from the nation's environmental laws, he said.

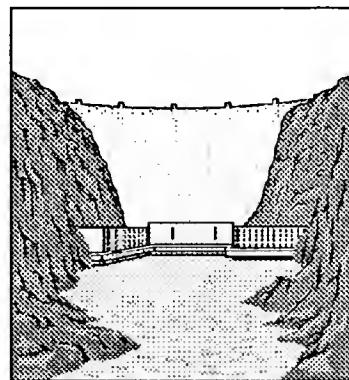
Source: Land Letter Vol. 15, No. 25

Landowners Angry over TVA Shoreline Plan

Landowners in Chattanooga, TN, met with Tennessee Valley Authority (TVA) officials on August 1 to "voice disapproval" over the TVA's plan to form a 50-ft. vegetation buffer zone along 10,995 mi. of shoreline at 30 TVA lakes. The agency has said that unless development is curtailed, wildlife and water quality will be endangered.

TVA's Tere McDonough said, "We have taken the position to try to

balance the strong developmental interest against the strong environmental interest and strike somewhere in the middle." Over the past 50 years, landowners have developed 17% of the property fronting TVA reservoirs. If current rates continue, two-thirds of lakefront property could be developed in 25 years, according to a TVA study.



Residents say the buffer zone will hurt property values, restrict use, and cost homeowners \$100 in registration fees and \$1,000 in construction deposits on new buildings. Some environmentalists are also skeptical about the proposal, warning that the TVA could choose to develop the zone in the future for profit.

Additional meetings will be held across the TVA's seven-state region this fall. A TVA decision is not expected until next year.

Source: Greenwire Vol. 6, No. 65

Natural Resource Summit of America (NRSA)

"After years of mutual suspicion and occasional hostility," two "frequently feuding wings of the conservation movement" -- environmentalists and hunters and fishers -- have vowed to work together to hold lawmakers accountable for their stances on natural resource issues.

Some 31 groups (with a total

membership of 20 million) have formed a coalition called the Natural Resource Summit of America (NRSA). The group held



its first meeting in Birmingham, AL, on August 4 in conjunction with a bass fishing tournament. The meeting brought together groups ranging from the National Taxidermists

Association and Buckmasters Inc. to Defenders of Wildlife and the Sierra Club.

The groups, sharing common ground on issues such as air and water quality, have signed a joint declaration of principles and vowed to make environmental issues a large part of the upcoming elections. NRSA leaders said that efforts by the GOP-led Congress to rewrite the Clean Water Act helped bring the groups together.

Peter Rafle, Director of Communications for Trout Unlimited said, "It is not as though the two sides haven't spoken to each other at all over



the past 20 years.

They've just done it in ones and twos." "The principal aim of both sides in the coalition is to send a sharp message" to GOPers who threatened to weaken environmental laws during the 104th Congress. For example, Geoffrey Sommer of the Utah Bass Anglers Sportsman Society "is a lifelong Republican who says he is rethinking how he will use his vote in November."

Some observers hope the NRSA will do more than oppose environmental "rollback" attempts, but will also push proactively for strong

environmental legislation.

However, the alliance between the two sides is clearly fragile. For example, Rafle said that Trout Unlimited members, with an average income of \$105,000, tend to be conservative "on almost every issue apart from the environment." Meanwhile, Bob Ferris, Director of Defenders of Wildlife, said that members of his group earn \$45,000 a year and that 70% to 75% of them are Democrats.

Source: Greenwire Vol. 6, Nos. 69 and 76



on environmental protection.

REP also recently gave out its Environmental Hero awards to five GOP Congressmen -- Sen. John Chafee (RI) and Reps. Sherwood Boehlert (NY), Connie Morella (MD), Richard Zimmer (NJ) and John Porter (IL). It gave out Environmental Zero awards to Sens. Larry Craig (ID) and Frank Murkowski (AK); and Reps. James Hansen (UT), Don Young (AK) and Tom DeLay (TX).

Marks said, "The heroes were easier to do because there were so few of them. The zeros were picked for their abysmal leadership in the wrong direction".

Source: Greenwire Vol. 6, No. 94

Clinton/Dole/Perot on Environmental Issues

The basic differences between President Clinton and Senator Dole on environmental issues are stark. Clinton relies on the federal government to enforce and to increase national environmental protection. Dole, critical of the scope and cost of federal rules, wants to scale back the government's regulatory role.



Republicans for Environmental Protection

The group Republicans for Environmental Protection (REP) has criticized the environmental plank of the Republican platform this year, saying it is full of "corporate welfare" for mining, timber, and oil companies. REP, a national grassroots group formed about a year ago to oppose the party leadership's "anti-environment agenda", now has chapters in 45 states."

REP has called on Bob Dole and Jack Kemp to repudiate the GOP environmental agenda. While REP President Martha Marks admits the group may not be able to influence the November presidential election, she hopes it can play a role in some congressional races.

For instance, the group recently named Rep. Christopher Shays (R/CT) its "environmental legislator of the year" for his consistent record of voting in favor of environmental safeguards and opposing recent GOP attacks

The Republican takeover of Congress introduced a new environmental agenda that called for freezing, weakening, or rolling back 25 years of environmental legislation. Clinton's stand against that agenda helped to restore his popularity even after Democrats were crushed in the 1994 GOP landslide.

"More than any other time, the environment has been an absolutely top priority for this President," says Kathleen A. McGinty, chairwoman of the White House Council on Environmental Quality. "For the first time, the environment is part of every senior discussion this administration conducts."

But for many environmentalists, Clinton is a latecomer to the debate. "Clinton's record is, for the most part, a disappointment," says Daniel J. Weiss, Political Director of the Sierra Club. "It may just be that expectations were unrealistically high about what he would be able to accomplish, but early on he didn't invest his political capital in fighting for the environment."

Clinton did reverse some Bush administration policies, including adding new controls on ozone-depleting carbon dioxide emissions and increasing the number of chemicals that industries must report if they are discharged into the air or water. But other initiatives showed that Clinton's priorities were elsewhere. For example, Clinton in 1993 proposed increasing grazing fees, updating a century-old mining act and introducing an energy tax. He dropped all three under fire from then-Democratic leaders in Congress in order to save his budget and economic plan.

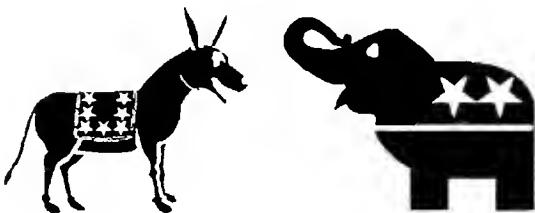
Clinton's early, meandering course on the environment is best characterized by his approach to logging in national forests. Clinton broke the deadlock in the Pacific Northwest, where national forests had been closed to logging in order to protect endangered species, such as the northern spotted owl. His Northwest forest plan opened some woods to logging while preserving vast tracts. Neither environmentalists nor timber companies liked the solution, but most considered it fair.

Then Clinton broke his own truce by signing the so-called "salvage timber rider." This legislation, folded into a 1995 budget bill, suspends environmental laws and requires the government to open areas for logging that had been deemed too sensitive for the chainsaw. Clinton first vetoed the bill and then signed it. Later, he

declared the rider workable but, as trees fell and criticism mounted, he again announced he was opposed to it.

White House aides call the rider Clinton's biggest environmental blunder. "We worried that the rider would be an invitation to more litigation and more polarization and more court battles," McGinty says. "That's exactly what this legislation brought."

Shortly after Republicans gained control of Congress, they gave Clinton reason to hold his ground on the environment. The GOP pushed oil drilling in the Arctic National Wildlife Refuge, a weakening of the Endangered Species Act (ESA), curbs on the USEPA, and rollbacks in the Clean



Water Act. Clinton stopped them all with a veto or threat of a veto.

Clinton has also made progress using environmental laws that drew previous administrations into lengthy lawsuits and expensive delays. For example, under Clinton the USEPA, trying to speed up the cumbersome Superfund law, now pushes for quicker cleanups of urban waste sites that can be restored for industrial use. And his Interior Department has sidestepped collisions over the ESA by winning voluntary agreements with large landowners, such as timber companies, to protect habitats of imperiled animals and birds.

While conservationists applaud these efforts, critics say that laws such as the ESA and the Superfund remain broken, and that the administration is resisting

reform. "The administration is just putting off the problems with these laws," says Luke Popovich of the American Forest and Paper Association, which wants to see the ESA curtailed. "You can't just work around the edges when you have to go to the heart of the problem."

While Clinton will talk up the environment, Dole may go through the campaign without uttering a word about it. Dole has not given a major talk on the issue and his campaign declined to offer any one to speak on the record about the Republican's environmental stands. Dole is staying quiet for a reason: His environmental record is modest and he has little hope of flanking Clinton on the issue this late in the campaign. "The environment is not going to be a cutting issue for us," says one Dole adviser who asked not to be named. "Our goal is to not say much or do anything that puts people off."

Indeed, Dole has struggled when he has tried to compete. For example, he earns credit for proposing a \$200 million effort to protect the Everglades approved by Congress this year. But his proposal pales to a sweeping Everglades protection plan Clinton had already offered. "The environment can't be a primary issue for Dole's campaign because you don't try to steal the other fellow's strength and make it your own," says George D. Baker, a Washington lobbyist for companies seeking to overhaul the Superfund law. "Which is not to say Republicans don't have the better story to tell."

Dole argues that the federal government should impose fewer rules and states should have more say in how they are enforced, a strategy he says will improve the efficiency of environmental standards. As his campaign statement puts it, "Current implementation of federal environmental laws is not as

effective as it should be in achieving the results we all desire, and is far more costly to the American people than is necessary."

Nonetheless, Dole touts his few environmental credentials: shepherding the 1990 Clean Air Act revision through Congress, sponsoring conservation and wetlands measures in this year's farm bill, and promoting alternative fuels. "Every once in awhile he does the right thing," says Burt Glass of the League of Conservation Voters (LCV). "Overall, his record is not characterized by bright spots."

Indeed, few of Dole's accomplishments on the environment come without caveats. To hold the Clean Air Act deal together, Dole opposed many amendments to raise anti-pollution standards. His support of alternative fuels is defined by his loyalty to Archer Daniels Midland Co., the agriculture giant that is both the biggest producer of the alternative fuel ethanol and one of Dole's top financial supporters.

His broader voting pattern, though, reveals a senator who resisted expanding or even maintaining federal environmental standards. In 1987, Dole joined 13 other senators opposing renewal of the Clean Water Act. In 1994, he opposed protecting CA deserts. In this Congress, Dole voted to open the Arctic National Wildlife Refuge to oil exploration. The LCV's annual ranking of Congressional voting records, one barometer watched by environmental groups, gives Dole a lifetime score of 19 out of a possible 100. The group has given him a zero three times since 1992.

Dole's most prominent role, however, has been leader in the congressional effort to rein in the federal government's power to regulate industry. Dole's bill

would block many new federal rules and regulations that increase costs on industry. Opponents, including environmental groups, argued the bill allowed industries to stop tougher protections for health, safety and the environment. Clinton vetoed the bill when Congress attached it to a budget measure. Now, regulatory reform is part of candidate Dole's economic package.

The second bill that Dole has championed strikes more directly at environmental concerns: a measure that would have the government pay landowners when federal rules prevent them from using their land. But the Clinton administration and environmentalists oppose the legislation, saying it would make environmental laws too expensive to enforce while paying people for following the law.

TX billionaire Ross Perot's return to the presidential race adds a new dynamic, but Perot has yet to make clear any proposals for the environment. His campaign declined to offer a spokesperson on the issue, and his position paper talks generally of balancing jobs and the environment.

During his 1992 campaign, Perot proposed hiking the gas tax by \$0.50/gallon as a way to reduce America's reliance on fossil fuels. Perot also said he opposed federal subsidies for mining, grazing and timber industries, which often pay below-cost fees, a stand he repeats in his 1996 position paper.

But Perot's record elsewhere had another side. In 1989, the U.S. Fish and Wildlife Service was preparing to name the golden-cheeked warbler, a shy songbird that lives among the TX oak, as a threatened species. A Perot-owned company cleared land it owned outside of Austin, TX, to beat the listing and to limit the bird's nesting on its property.

In 1992, Time magazine reported that Perot had workers six years earlier blow up a coral reef in Bermuda to make way for his vacation home's boat dock. The local government had refused Perot a permit but the work went ahead anyway. The magazine, noting Perot's denials that he did anything wrong, also reported that the billionaire snorkeled out to the reef to oversee preparation for the explosions.

Source: Newhouse News Service, byline article by Brent Walth, 9/10/96

Environment and the Election

Forty-two percent of Americans believe the environment is one of the most important issues in deciding whom to vote for in the presidential election, according to an August 17 Newsweek poll. Another 42% said environmental issues are "important, but not as important," while 15% said they were "not too important." In contrast, a greater percentage of those polled believe economic issues (74%), crime (70%) and "the drug problem" (64%) are each one of the most important issues in the election. But the environment was ranked above abortion and immigration; only 33% considered those two issues to be among the most important.

Of the 42% who considered the environment a top issue, 50% said they would vote for the Democratic Clinton/Gore ticket, 34% for the Republican Dole/Kemp team and 3% said they would support the Reform candidates. Thirteen percent were undecided. Princeton Survey Research Associates conducted the poll interviewing 933 registered voters. The margin of error was +/-4%.

In a different poll sponsored by the DC-based Competitive Enterprise Institute (CEI), which opposes most government

intervention in the economy, 65% of those polled said state or local governments would do a better job with environmental protection than the federal government.

CEI's Jonathan Adler said, "This poll shows that a majority of Americans have discovered something that most policy makers in Washington have not -- extensive federal bureaucracies are not necessary for environmental protection, and there is nothing anti-environment about pursuing environmental reform."

According to the CEI poll, 64% of respondents said government should compensate landowners "when environmental regulations prevent landowners from using their property." Fewer than 5% of voters identified environmental concerns as "the single most important problem facing the country;" just as many said the "most important problem" is President Clinton.

The 1,000-voter survey was conducted from June 29-July 2 by The Polling Co. Margin of error was +/-3.1%.

In still another poll -- this one sponsored by the National Wildlife Federation (NWF), the environment is a "high" priority for 75% of voters, and the number who think environmental laws don't go far enough is 49%, up 8% since 1994,

Some 54% of respondents said environmental issues would influence their choice for president, compared to other issues such as crime (77%), education (76%), and the deficit (63%). The voter groups most likely to be influenced by candidates' stances on the environment are women, blue-collar voters, independents, young voters, urbanites, non-whites and outdoor recreationists.



The poll offered arguments for and against certain environmental programs and proposals. It found that, despite language emphasizing "tradeoffs" or "costs," a majority of the respondents supported "almost every conservation measure proposed to them." The survey conducted by Hart Research Associates and Research/Strategy/Management Inc. polled 1,006 voters between July 16-18. Margin of error was +/- 3.5%.

Additional details of the NWF poll follow, shown in % of support by persons polled:

(1) How do you rate the enviro record [Excellent (E), Good (G), Fair (F), Poor (P), or Not Sure (NS)] of:

(E)	(G)	(F)	(P)	(NS)	
Congress	2	17	44	21	16
Clinton admin.	4	29	40	14	13

(2) Rate the value of enviro proposals in relation to the trade-off or cost of these programs [Definitely Worth Doing (D), Probably Worth Doing (P), Probably Not Worth Doing (PN), Definitely Not Worth Doing (DN), Not Sure (NS)]:

(a) Full disclosure of companies' toxic emissions even at substantial cost to consumers:

(D)	(P)	(PN)	(DN)	(NS)
49	29	13	5	4

(b) Tax incentives for private landowners to restore/protect wildlife habitat on their property:

(D)	(P)	(PN)	(DN)	(NS)
36	37	13	10	4

(c) Higher fees for mining, logging, grazing even if it financially harms those industries:

(D)	(P)	(PN)	(DN)	(NS)
20	34	24	14	8

(d) Maintain funding for international family planning even if money could be used for deficit:

(D)	(P)	(PN)	(DN)	(NS)
21	26	22	22	9

(e) Who should be responsible to set enviro protection standards?

Federal Government -	38
States/Local Government -	53
Some of both -	4
Depends/Neither -	1
Not Sure -	4

(f) Do you agree that landowners should receive financial compensation from government when prevented from using their property in a way that might effect endangered species or wetlands?

Agree -	38
Disagree -	52
All others -	10

Source: Greenwire Vol. 6, No. 70, 77

Teaming With Wildlife Draws Heat

An Associated Press story on September 17 falsely attributed the *Teaming With Wildlife* program to Interior Secretary Bruce Babbitt. *Teaming With Wildlife*, a proposal of the International Association of Fish and Wildlife Agencies (IAFWA), recommends imposing a small tax on recreation equipment, including hiking boots, canoes, camping gear and even bird seed, to support conservation initiatives.

Dubbed the "nature lover's tax" in the press, the plan would be based on the manufacturer's price of the product, often 35-50% less

than the retail price. A surcharge of less than 1-5%, could raise \$350 million a year, supporters say.

Responding to press reports, Sen. Frank Murkowski (A/AK) who chairs the Senate Energy and Natural Resources Committee criticized the idea. "I am on record as supporting efforts to bring conservation funding initiatives to the forefront for consideration and debate," he said. "But it's just not right to levy additional taxes on Americans for unspecified purposes!"

The Associated Press had it right that Secretary Babbitt did address the annual meeting of the IAFWA on September 16 and during his remarks he did say that he personally favored the concept of funding state wildlife programs through a surcharge on the gear used by people who benefit from state outdoor recreation services. But contrary to press reports Babbitt's statement is not the position of the Clinton Administration.

"My statement led people to believe that the Administration supports the wildlife agencies' proposal for an outdoor gear surcharge. That is not true," said Babbitt. "I want to clearly state that the President does not support and has not ever seen, this proposal."

The IAFWA, a consortium of wildlife officials from the United States, Canada and Mexico, backs the idea because the revenue raised would be used for wildlife education, recreation and conservation projects. The IAFWA proposal has also been endorsed by more than 1,200 wildlife-related businesses and organizations, but others, including many outdoor equipment manufacturers oppose the idea.

Babbitt told the IAFWA that about 85% of people are more willing to

pay the tax if the money goes directly toward improving wildlife habitat and parks.

MICRA joined the groups supporting *Teaming With Wildlife* this past spring. The proposal is seen as a way of reducing the burden hunters and fishers currently bear in support of nongame species management -- species that support a much broader range of interests than just hunting and fishing.

Source: Land Letter Vol. 15, No. 25

Mollie Beattie Wilderness Area

In signing the Mollie Beattie Wilderness Area Act (S. 1899), naming an Alaskan wilderness area in her name, President Clinton praised the former U.S. Fish and Wildlife Service Director for her public service:

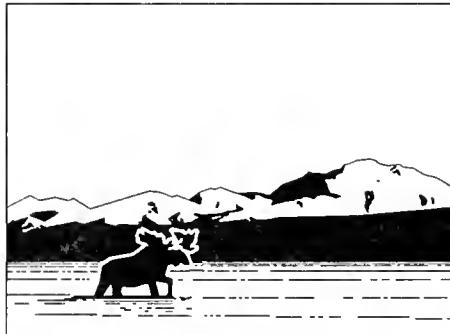
"...Although her tenure as director was tragically cut short, Mollie left an enduring legacy to the American people. She was determined to conserve the

'Mollie strove throughout her life to help people understand the connections that linked the quality of their daily lives to the health and well-being of America's wildlife. Anyone who ever worked with Mollie recognized that her caring, compassion, and wisdom extended to all living creatures. She truly understood the need to actively engage people in wildlife conservation efforts.'

'Under this legislation, Mollie Beattie's name will be forever associated with one of the most wild and beautiful places on this planet, the Brooks Range of Alaska's Arctic National Wildlife Refuge. It is entirely appropriate that we honor Mollie in this way. She was a passionate defender of our 508 National Wildlife Refuges, the largest system of lands in the world dedicated to wildlife conservation. She saw them as places that must be appreciated and honored, as places where we could begin to fulfill our sacred trust as stewards of God's creation. Mollie worked tirelessly, even as her health was failing, to keep these places wild for the benefit of Americans today and for those who will follow us..."

Contact: White House Press Office, (202) 456-2100

International Ictalurid Symposium



world's wild creatures and their habitat, and to do so effectively. As a direct result of her efforts to make the Endangered Species Act work better, Americans everywhere have voluntarily joined in conserving and restoring the landscapes and open spaces that surround them.

An International Ictalurid Symposium, Catfish 2000, will be held in the Quad Cities (Rock Island and Moline, IL and Bettendorf and Davenport, IA) in June 1998. Initial organizing sponsors are In-Fisherman, the Quad City Conservation Alliance, the Upper Mississippi River Conservation Committee, and the Iowa and Illinois chapters of the American Fisheries Society.

The symposium will emphasize and summarize current knowledge of the biology and management of

channel, blue, flathead and white catfish. Non-game species will also get some attention. A call for papers will be issued this fall.

Wildland Hydrology Courses Offered

A series of courses have been put together by *Wildland Hydrology Consultants*, Pagosa Springs, CO that are "designed to provide hands on experience for those individuals working with rivers and watersheds".

The offerings for 1996 will allow individuals to progress through a range of interrelated courses beginning with the fundamentals in "Applied Fluvial Geomorphology" and continuing through the more complex course of "River Restoration". A series of pre-requisite courses will be presented through lectures and "on-the-ground" field experience.

The overall intent is to develop a unique expertise in the applied science by presenting specialized techniques in field data collection and analysis, prediction

methodologies and project design, implementation, and monitoring experiences to help meet the current challenges facing today's scientists. A certificate of training will be issued for each course completed. In response to numerous requests, two additional courses will be offered in 1996 and early in 1997 including "Grazing and Riparian Management" and "Hydrology for Managers".

The short courses are designed for hydrologists, engineers, fisheries biologists, and other specialists involved in water resource research; fish habitat improvement; non-point source pollution; watershed analysis; riparian ecosystems; and resource management on urban, agricultural, and wildland watersheds.

The short courses are held at the Inn At The Pass conference center at the foot of Wolf Creek Pass in the San Juan Mountains near Pagosa Springs, CO. The geologic variety surrounding the facility provides a diversity of streams and landform. Field trips

cover life zones from the semi-arid desert to the Alpine.

For additional information contact: Wildlands Hydrology, 1481 Stevens Lake Road, Pagosa Springs, CO 81147, (970) 264-7100 or 7120, FAX (970) 264-7121

New Book - Applied River Morphology

Applied River Morphology is a new guide to the classification, assessment and monitoring of rivers and the applications for water resource management. According to Luna Leopold, "This book is a generous and detailed explanation of the classification system and how it might be used to incorporate the observed processes of river mechanics into restoration designs that enhance the beauty and health of channels."

Cost is \$89.95 from Wildland Hydrology Books, 1481 Stevens Lake Road, Pagosa Springs, CO 81147, (970) 264-7100.

Meetings of Interest

October 31: MICRA Paddlefish/Sturgeon SubCommittee meeting, Missouri Dept. of Conservation, Powder Valley Conservation Nature Center, St. Louis, MO. Contact Kim Graham, Missouri Dept. of Conservation, (573) 882-9880.

November 13: 3rd Annual Habitat Restoration Program Symposium, Grand Junction, CO. The purpose of the symposium is to give everyone a status update on the progress of the Upper Colorado River Habitat Restoration Program, and to solicit input on the scope, direction, and approaches of the Program.

November 15-17: Urban Streams

Conference, Arcata, CA.

Sponsored by the city of Arcata, the conference will include sessions on treating streams in urban areas and working with the natural properties of streams. Contact Susan Schramm, Conference Coordinator, Environmental Services Department, City of Arcata, 736 F Street, Arcata, CA 95521. (707) 822-8184. E-Mail: creeksconf@aol.com.

December 10: MICRA meeting, Red Lion Hotel, Omaha, NE. This is MICRA's mid-year meeting and will be held in conjunction with the 58th Midwest Fish and Wildlife Conference from 8 A.M.

until Noon in the Kansas Room. Contact: Jerry Rasmussen, MICRA Coordinator/Executive

Secretary, (319) 359-3029.

January 14-16, 1997: 1st Annual Conference on Natural Resources of the Missouri River Basin. A multi-disciplinary conference is being established to provide a forum for information exchange between researchers and resource managers on issues related to the stewardship, ecology, and management of the Missouri River mainstem, floodplain and tributaries. Contact: Mark Lastrup, USGS-BRD, Midwest Science Center, Route 2, 4200 New Haven Road Columbia, MO

65201, (573) 875-5399 X1703,
E-mail: mlastrup@msc.nbs.gov
July 1997, III International

Symposium on Sturgeon, ENEL
Training Centre, Piacenza, Italy.
Contact: Dr. P. Bronzi, ENEL spa -
CRAM via Monfalcone, 15 -

20132 Milan (Italy) phone: + + 39-
2 - 72243412 or 3452, FAX:
+ + 39 - 2 - 72243496, E-mail:
bronzi@cram.enel.it.

Congressional Action Pertinent to the Mississippi River Basin

Fish and Wildlife

H.Res. 466 (Bonilla, R/TX) a resolution providing for the consideration of the bill **H.R. 2275** to reauthorize the Endangered Species Act.

H.R. 3811 (Shadegg, R/AZ) to provide incentives for the protection of endangered species.

H.R. 3862 (Chenoweth, R/ID) to revise the Endangered Species Act to ensure that any person having any economic interest that is directly or indirectly harmed by a designation of critical habitat may bring a citizen's suit under that act.

Parks

Senate Energy Committee on June 19 approved **S. 1703** to provide the National Park Foundation a greater ability to

raise funds from individuals, foundations and corporations to help repair and preserve national parks.

H.R. 3819 (Hansen, R/UT) allows the National Park Foundation to accept corporate sponsorship moneys for parks. House Resource Committee held a hearing on July 25.

Public Lands

S. 1844 (Murkowski, R/AK) to amend the Land and Water Conservation Fund Act to direct a study of the opportunities for enhanced water based recreation and for other purposes. Approved by the Energy Committee in September.

H.R. 3619 (Campbell, R/CA) to provide off-budget treatment for the Land and Water Conservation Fund.

H.R. 3752 (Young, R/AK) a bill to preserve the sovereignty of the United States over public lands and acquired lands owned by the United States, and to preserve state sovereignty and private property rights in non-federal lands surrounding those public lands and acquired lands

Water and Wetlands

S. 1660 (Glenn, D/OH) to provide for ballast water management to prevent the introduction and spread of nonindigenous species into the waters of the United States, and for other purposes.

H.R. 3217 (LaTourette, R/OH) to provide for ballast water management to prevent the introduction and spread of nonindigenous species into the waters of the United States, and for other purposes.

Source: Land Letter

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River Crossings

NATIONAL RIVER SURVEY

Volume 5

November/December 1996

Number 6

Reader Survey

This ends our fifth year of publishing *River Crossings*. We hope our newsletter has provided a service not only to our members, but to the "River Community" as well.

We have conducted reader surveys every other year since publication of *River Crossings* began in 1992, and have received many useful comments and words of encouragement. We've tried to use our reader's comments to continually improve the publication.

Also, since *River Crossings* is provided to our readers at no cost, we need to constantly trim our mailing list in order to reduce our costs and eliminate mailings to those who aren't finding it useful enough to respond.

So please fill out and return the "Reader Survey" sheet provided as an insert to this issue; it will ensure that your name remains on our mailing list.

In the meantime, we wish everyone a very happy holiday season; and thank you for your continued interest in and support of our rivers!



Merry Christmas

ND/MT Paddlefish Research

Fred Ryckman, a biologist for the ND Game and Fish Department stationed in Bismarck, has worked with other ND and MT biologists for a number of years on paddlefish research and management on the Upper Missouri and Yellowstone rivers. Fred and his colleagues have been involved in managing what is known as the Yellowstone-Sakakawea paddlefish stock (i.e. paddlefish that move between Lake Sakakawea in ND and the Yellowstone River in MT).

Fred is now involved with MICRA, working with biologists from 22 states across the entire Mississippi River

Basin assessing basinwide paddlefish movements, survival, and population status using coded wire micro tags. We are grateful to Fred for summarizing some of his work on the upper Missouri and Yellowstone rivers for *River Crossings*. Fred's summary follows:

Dr. Dennis Scarneccchia, University of ID, has coordinated much of the ND/MT paddlefish research in the past few years. This work included the collection of thousands of dentaries from harvested paddlefish in both states, and the determination of age and growth information using the Optical Pattern Recognition System. Though there appears to be

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significant recruitment, at least in some years, many of the fish aged to date are quite old. Age of harvested male paddlefish in recent years has averaged from 15-20 years, while average female age has varied from 23-28 years. Many fish, however, were over 40 years old.



"Adult Paddlefish"

Focus of research activities on the Yellowstone-Sakakawea stocks has traditionally been on tagging adult paddlefish. Since 1964 MT has tagged over 6,000 adult paddlefish in the Yellowstone River, mostly at the Intake Diversion Dam. Approximately 2,500 additional adult paddlefish have been tagged near the confluence of the Missouri and Yellowstone rivers in ND over the past 4 years, including 444 fish tagged in 1996. As a result of this intensive effort, important information has and will continue to be obtained regarding exploitation rates, population size and structure, movements, and reproductive periodicity of adult paddlefish in this stock.

Bill Gardner, MT Fish, Wildlife and Parks, has extensively sampled the lower Yellowstone River for paddlefish eggs and larvae in an attempt to identify specific spawning sites. From his and other recent work, it is becoming apparent that during years when the Yellowstone River rises steadily for a prolonged time period (with flows remaining over 40,000 cfs for at least a few weeks), good to excellent paddlefish reproduction occurs.



"Larval Paddlefish"

Over the past few years, graduate students from the University of ID, along with ND Game and Fish Department personnel, have been using boats to complete visual transect counts of young-of-the-year

(YOY) and yearling (YRL) paddlefish in Lake Sakakawea's upper reaches. This technique has proven to be the most promising method to date for developing indices of abundance for these two age cohorts. Observations of wild YOY paddlefish in 1991 and transect counts collected in 1993 and 1995 were sufficiently strong (up to 1,756 YOY in 1993) to speculate that it would be possible to capture and micro tag significant numbers of wild YOY paddlefish in years exhibiting high reproductive success.

On August 1, 1996 biologists noted the presence of large numbers of YOY paddlefish swimming near the surface of the upper reaches of Lake Sakakawea, and a micro tagging effort was initiated. During 9 days of field work between August 2-15 a total of 2,360 YOY and 59 YRL paddlefish were captured. Biologists used small boats to cruise slowly back and forth across the lake and collected the young fish using long-handled dip nets. Approximately 93 boat hours of

netting effort were expended. A total of 2,346 YOY were tagged; 14 of these were recaptured fish which had been tagged earlier during the August tagging period. Catch rates, estimated as catch per boat-hour, ranged from 20 fish on the beginning and ending sampling dates to 50 fish per boat-hour during the middle of the sampling period.

Biologists estimated that one-third of the YOY observed and one-tenth of the YRLs observed were captured. Two of 59 YRLs captured were identified as recaptures from the 9,093 hatchery reared fish that had been coded wire tagged just prior to being stocked in 1995. Recapture location for both of these YRL fish was approximately 30-35 river miles upstream of their stocking location. A few paddlefish noticeably larger than YRLs, perhaps 2- or 3-year olds, as well as several large adults, were seen but not captured or quantified. Some evidence of gull and fish predation on YOY paddlefish was observed.

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
(MICRA)
P.O. Box 774
Bettendorf, IA 52722-0774

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any

Results of this and past research, indicate that upper Lake Sakakawea is consistently inhabited by YOY, YRL, and older paddlefish in July and August. This work also proved that YOY paddlefish can be captured and tagged in large numbers, at least under certain conditions. The transect approach for developing YOY and YRL indices of abundance has also shown promise and will continue. Future coded wire micro tag returns will allow for further assessment of year class strengths of both hatchery stocked and wild paddlefish, as well as document tagged fish movements, allow for validation of age-growth studies, and provide information on other aspects of paddlefish ecology necessary for the effective management of this stock.

When the ND/MT work is coupled with similar work being conducted by biologists in 21 other states across the basin through the MICRA basinwide paddlefish tagging project, biologists will be able to develop a systemwide information data base on paddlefish never before dreamed possible.

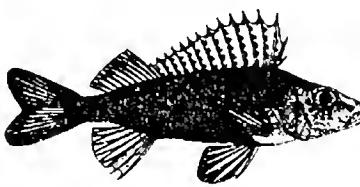
Meanwhile, a world caviar shortage has increased the demand for paddlefish eggs. The supply of caviar is said to be shrinking because Iranian and Russian producers are over-fishing the Caspian Sea's sturgeon population, the traditional prime source for caviar. Since the breakup of the Soviet Union, the Caspian Sea is said to be fished without regulation.

Paddlefish caviar taken from the Missouri and Yellowstone rivers near Williston, ND, not considered as good as Russian Beluga caviar but equal to the Russian's second-best Sevruga caviar, has more than doubled in price in recent years. Ultimately, consumers pay from \$65-\$70 an ounce for the "made in ND" product! This according to the *Minot Daily News* (11/18/96).

Contact: Fred Ryckman, State Game and Fish Dept., 100 N. Bismarck Expressway, Bismarck, ND 58501, (701) 328-6352

Round Gobies Poised to Invade the Mississippi River Basin

Ports around the Great Lakes have increasingly become major North American points of entry for several exotic aquatic species. Representing several different aquatic taxa and trophic levels, these species include the spiny water flea (*Bythotrephes cederstroemi*), the zebra mussel (*Dreissena polymorpha*), and the river ruffe (*Gymnocephalus cernua*).



"River Ruffe"

Most of these foreign immigrants are native to Eurasia and are presumed to have been initially introduced to the Great Lakes during the 1980s as a result of unregulated ballast water exchange. Proliferation of populations of these organisms has produced serious ecological and economic consequences in portions of the Great Lakes region, and in the case of the zebra mussel, across major portions of the Mississippi River Basin. The zebra mussel is presumed to have used the Great Lakes and the Illinois Waterway System near Chicago as its invasion route. The Illinois Waterway System provides a direct connection for continuous transfer of water from Lake Michigan to the Illinois River. Assisted by barge traffic, zebra mussels are spreading across the entire Mississippi River drainage basin. The round goby (*Neogobius melanostomus*) now appears to be poised to follow the same path.

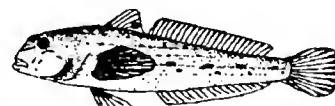
Initially observed in the St. Clair River near Detroit in 1990, the round goby had spread to other portions of the Great Lakes drainage basin as distant as Duluth, Cleveland, and Chicago by 1995. This sedentary benthic fish resembles a sculpin in its general appearance and certain behavioral traits and is displacing sculpin at some Great Lakes locations. A second

species, the tubenose goby (*Proterorhinus marmoratus*), also appeared in the St. Clair River in 1990; but this species, which is endangered in its native habitat, has remained uncommon.

Concern for the potential spread of round gobies led the U.S. Fish and Wildlife Service to organize and lead a cooperative sampling effort this fall to assess the current distribution of round gobies in a portion of the Illinois Waterway System. Cooperators included staff from seven government agencies (federal, state, and municipal) and three university systems, as well as members of two public interest groups.

Sampling was conducted in mid-autumn at several sites in Chicago's south and southwest metropolitan areas using a variety of gears that included modified Windermere traps, minnow traps, set lines, bottom trawls, and angling.

A total of 61 round gobies were captured in the Little Calumet River in south Chicago at locations upstream of river mile 321 (i.e., within 12 river miles inland from Lake Michigan). No round gobies were captured at any other sampling locations in connecting channels downstream of this point as far away as Joliet (river mile 286). Bottom trawling near rocky shorelines was the most efficient method of capture, accounting for 87% of the total round goby catch.



"Round Goby"

The rocky substrate favored by round gobies in the upper reaches of the Little Calumet River is less common over a short reach of the river (about 1 mile) downstream of river mile 321. This lack of preferred substrate may temporarily restrict the round goby's downstream distribution in this portion of the Illinois Waterway System. It is anticipated, however, that as round goby densities increase in upstream reaches, additional downstream

movement will occur. Also it is feared that the goby will move opportunistically through deliberate or unintended human intervention.

Round gobies can grow to a length of 250 mm (10 inches) as adults. They have large heads, soft bodies, and dorsal fins lacking spines, slightly resembling large tadpoles. The unique feature of gobies is their fused pelvic (bottom) fins, which form a suctorial disk. In flowing water habitats, this suction disk aids in anchoring the fish to hard substrates such as rocks. Young round gobies are a solid slate gray; while larger individuals have blotches of black and brown over their bodies, and their dorsal fin may be tinged with green.

Round gobies look similar to sculpins, a native, bottom-dwelling fish occasionally caught by anglers. Sculpins (*Cottus bairdi* and *C. cognatus*), also called muddlers or Miller's thumb, are usually solid brown or mottled. Both sculpins and goby males can appear almost solid black during spawning. Round gobies have a distinctive large black spot on the front dorsal fin; and sculpins often have a dark spot in the same location. Sculpins can most easily be distinguished from gobies by their separate pelvic fins.

After entering a new area, gobies are capable of rapid population expansion. Densities in rocky areas of Lake Michigan's Calumet Harbor already exceed 20/m², equivalent to 20 fish in a space the size of a bathtub. The fish in this harbor range from 12 to 140 mm (0.5 to 5.5") in length, and likely represent at least two age groups.

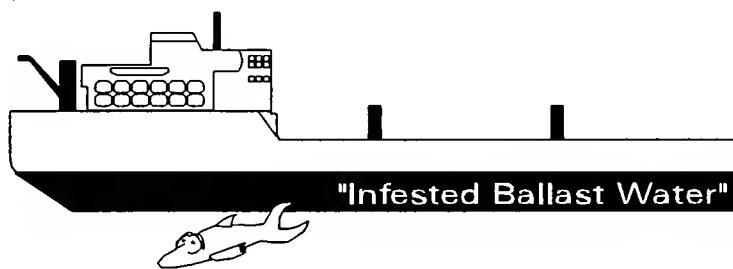
Round gobies possess four characteristics that make them effective invaders:

- They are aggressive, pugnacious fish that feed voraciously and may eat the eggs and fry of native fish such as sculpins, darters, and logperch. They will aggressively defend spawning sites in rocky habitats, thereby restricting access of native species to prime spawning areas.

- They have a well-developed sensory system that enhances their ability to detect water movement. This allows them to feed in complete darkness, and gives them a major competitive advantage over native fish in the same habitat.

- They are robust and are able to survive under degraded water quality conditions. This ability and their propensity to swim into holes and other crevices probably allowed round gobies to enter and survive in the ballast water of ships.
- Round gobies spawn over a long period during the summer months so they can take advantage of optimal temperature and food conditions. Females mature at 1 to 2 years and males mature at 3 to 4 years.

Spawning can occur frequently from April through September. Each female produces from 300 to 5,000 large (4 x 2.2 mm [0.16 x 0.09"]) eggs; these eggs are deposited in nests on the tops or undersides of rocks, logs, or cans; which are guarded by the males.



As noted previously, round gobies prefer rocky or gravel habitat and hide in crevices or actively burrow into gravel when startled. In the Black and Caspian Seas, gobies generally inhabit the near shore area, although they will migrate to deeper water (up to 60 m [197 feet] depth) in winter. They also are found in rivers and in slightly brackish water. In Europe, the round goby diet consists primarily of bivalves (clams and mussels) and large invertebrates, but they also eat fish eggs, small fish, and insect larvae.

Studies in the U.S. indicate that round gobies are aggressive and known to feed on a variety of small native fishes (e.g. darters) and insects, as well as zebra mussels that can bioconcentrate certain contaminants. Round gobies are themselves preyed upon by several sport fish species and may therefore represent a new link in the transfer of contaminants to higher trophic levels.

Gobies may compete successfully with native benthic fish such as sculpins and darters, and substantial reductions in local sculpin populations already have been reported after gobies have become established. On the positive side, zebra mussels are an important component of goby diets in their native range; and, in laboratory studies in North America, a single round goby can eat up to 78 zebra mussels/day. However, it is unlikely that gobies alone will have a detectable impact on zebra mussels. The round goby is expected to be one of several species (including ducks, crayfish, diseases, and other fish species) that eventually will reduce zebra mussel abundance.

Gobies are preyed upon by several sport fish species including smallmouth and rock bass, walleyes, yellow perch, and brown trout. Because the diet of round gobies consists predominately of zebra mussels, they may provide a direct transfer of contaminants from zebra mussels to sport fish.

Anglers are effected by gobies because they aggressively take bait from hooks.
Anglers in the Detroit area have

reported, at times, that they can catch only gobies when they are fishing for walleye. In fact goby fishing tournaments are now being reported in some areas of the Great Lakes, with the largest reported specimen so far being 7" long.

Eliminating an invading species once it becomes established usually is impossible, however, it may be possible to slow the spread of the round goby invasion through angler cooperation. Anglers and others can avoid accidentally spreading these species by dumping their bait buckets only in areas where they were filled, and by not taking unusual animals home to an aquarium. Anglers should also be aware that transportation of gobies or other exotic species across state lines is illegal.

Ballast water exchange at sea is one method of reducing additional introductions of foreign organisms.

Regulations to control ballast water dumping within North American waterways may help to prevent the spread of these exotic species (See the following article).

Contact: Mark Steingraeber, U.S. Fish and Wildlife Service, Fishery Resources Office Onalaska, WI, (608) 783-8431; and Illinois-Indiana Sea Grant Program in cooperation with the Michigan and Ohio Sea Grant College Programs as IL-IN-SG-95-10, (217) 333-9448.

Invasive Species Act

Minutes before final adjournment, the Senate unanimously approved the National Invasive Species Act (NISA). NISA is aimed at controlling the release of ballast water in aquatic ecosystems and thus the introduction of foreign species into North American waters. There were no changes between the House-passed version of September 28 (HR 4283) and the Senate passed bill. Copies of the bill can be obtained on the Internet through "Thomas" on the World Wide Web (WWW).

President Clinton signed NISA into law on October 26th. The bill, sponsored by Rep. Steve LaTourette (R/OH), updates and expands a 1990 bill requiring ships to dump ballast water at sea before entering U.S. waters. The legislation authorizes \$33.1 million annually over the next seven years to fight non-indigenous organisms. It also allots \$3 million for the U.S. Army Corps of Engineers to research zebra mussels. Bill co-sponsor Rep. Sherrod Brown (D/OH) said that dealing with the zebra mussel problem alone is expected to cost U.S. taxpayers \$5 billion by the year 2000.

Among other things, the new national ballast water management program provides for

- enforcement measures,
- a five-year ballast technology demonstration program,
- research authority,
- more regional coordination, and
- prevention guidelines for recreational vessel owners.

Most importantly, the bill sends the International Maritime Organization a

strong signal to keep up the pace in developing an international convention on ballast water management.

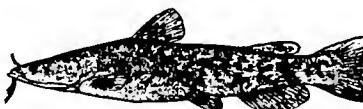
It is important to note that while very helpful, the bill will not provide complete protection against new exotic species invasions. Regulation of ballast water exchange will likely have limitations. It is essential therefore that reporting and sampling requirements be developed to assess its effectiveness, and that the ballast technology demonstration program be continued to develop alternative tools.

Sources: Greenwire Vol. 6, No. 103 and 124; and Northeast Midwest Institute

Aquatic Nuisance Species Costs

Non-native species have cost the U.S. economy billions of dollars and contributed to the decline of 42% of U.S. threatened and endangered species, according to a report released in late October by The Nature Conservancy (TNC).

The report, "America's Least Wanted," profiles a "dirty dozen" list of "the most damaging animal and plant invaders...introduced either accidentally or intentionally" into the nation's natural ecosystems. The list includes the flathead catfish, now in rivers and reservoirs in 18 states



"Flathead Catfish"

where it was previously unknown; the zebra mussel in the Great Lakes and the Mississippi River Basin; the rosy wolfsnail in Hawaii; the green crab in California and Northeast coastal states; the Australian brown tree snake in Hawaii; and the balsam wooly adelgid, an aphid-like insect that has "destroyed" about 75% of the South's spruce-fir forests.

The six most invasive plants include purple loosestrife, an "especially serious" threat to Northeast and upper

Midwest wetlands; tamarisk, which consumes vital water supplies in the Southwest; leafy spurge, which is pushing out native grasses on grazing lands and elsewhere nationwide; hydrilla, a fast-growing plant clogging Florida waterways; the toxin-releasing Chinese tallow in the Southeast; and miconia, which is shading out native plants in Hawaii.

While the effects of invasive species are well documented in the agricultural world, industries such as fishing, electric utilities and tourism lose more than \$1 billion a year, according to the Congressional Office of Technology Assessment. The TNC report claims that 79 animal and plant species have cost the U.S. economy \$97 billion from 1906 to 1991.

TNC President and CEO John Sawhill says that although it "will not be cheap" to handle the alien species problem, it is not impossible. Four keys to safeguarding the U.S. from alien pests are suggested:

- prevention of new additions,
- early detection and eradication of new pests,
- control and management of established alien species, and
- protection and recovery of native species and ecosystems.

Source: Greenwire Vol. 6, No. 120

ESA Issues

The 9th U.S. Circuit Court of Appeals ruled on October 31 that the federal government has one year to make final decisions on its own proposals to protect species under the Endangered Species Act (ESA). The ruling came from a case involving the coho salmon on the West Coast.

Meanwhile in a mid November hearing regarding a case before the U.S. Supreme Court, three justices "sharply questioned" the Clinton Administration's view that the ESA allows private citizens to sue only for greater protection of species and not for less protection. The case could affect how future lawsuits proceed under most major environmental statutes.

The specific case involves two OR

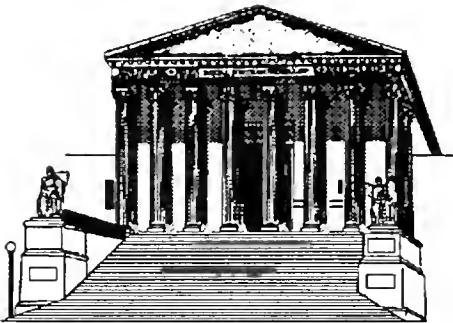
ranchers and two OR irrigation districts that in the early 1990s sued to stop the U.S. Dept. of the Interior (DOI) from reducing water flows into reservoirs in order to protect two fish species, the Lost River sucker and the shortnose sucker. The suit said that a U.S. Fish and Wildlife Service (USFWS) report calling for higher water levels was based on poor science, and that the USFWS had failed to consider the economic impact of the proposed action.

Like any other environmental laws, the ESA includes a "citizen suit" provision that permits "any person" to sue officials of the DOI or Commerce Dept. for failing to carry out the law. The 9th U.S. Circuit Court of Appeals dismissed the plaintiffs' lawsuit, ruling that the ESA's "citizen suit" provision does not apply to suits seeking less rather than more protection for a species. Judge Stephen Reinhardt, in the appeals court decision said, "Only plaintiffs who allege an interest in the preservation of endangered species fall within the zone of interests protected by the ESA."

In his arguments before the court, Deputy Solicitor General Edwin Kneedler seconded Reinhardt's assessment and said the citizen suit provision doesn't cover the interests of citizens with economic concerns. But the plaintiffs' attorney, Gregory Wilkinson, said the 9th Circuit ruling would lead to "discrimination against economic-based claimants" and "one-sided enforcement" of the ESA. He said his clients' land value had dropped sharply because of the threatened water supply.

Justice Anthony Kennedy, however, was "openly skeptical" of Kneedler's argument and Chief Justice William Rehnquist and Justice Sandra Day O'Connor also voiced doubts about the Administration's case. Kennedy accused Kneedler of advocating "a one-way law." Kennedy said, "We should be very cautious about receiving an argument that undermines the usual neutrality of law". He went on to say that Kneedler, "...just read resource-user protection out of the act."

While several of the justices' appeared



skeptical of the administration's position, the court was "clearly struggling with how to decide a case that could spark a rash of complaints that government has protected fish at the expense of property owners."

The court's ruling is expected by July.

Meanwhile, on November 13 Sen. Larry Craig (R/ID) listed ESA reform as one of his top priorities for the next Congress, saying that he plans to work with Sen. Dirk Kempthorne (R/ID) to reevaluate the act. Kempthorne spokesperson Mark Snider said an ESA rewrite is 70% complete and likely to be introduced early next year. However, Sen. Slade Gorton (R/WA), chair of the Senate Interior Appropriations Subcommittee, "said he was convinced the political climate wasn't ripe for an ESA rewrite.

In a bid to avoid clashes over ESA reauthorization, Reps. Jim Saxton (R/NJ) and Wayne Gilchrest (R/MD) held an all-day ESA forum on November 19th attended by about 30 lawmakers and representatives from groups such as the Sierra Club and timber giant Georgia-Pacific Corp. Saxton said, "We're going about trying to explore ways to find common ground, a coalition in the middle of the ideological spectrum, which could come together and pass a bill."

Saxton said it would take strong public pressure to get the 105th Congress to craft a bill acceptable to both environmentalists and conservatives, who want to protect property rights. He said, "In the absence of a welling of pressure from outside of Congress, I doubt this Congress will pass an Endangered Species Act".

U.S. Forest Service Chief Jack Ward Thomas, speaking at a November foresters' conference in Albuquerque,

NM, called for the ESA to be recast to emphasize ecosystem protection rather than single-species protection.

As examples of the difficulties that now arise under ESA enforcement, Thomas cited the year-old logging ban in NM and AZ to protect the Mexican spotted owl and the controversy over logging limits in the Northwest established to protect the northern spotted owl. The true intent of the ESA, he said, is to preserve "ecosystems upon which threatened or endangered species depend ... not the individual species." He also said that forest planners must find a way to combine the science of ecosystem management with the economic and social concerns of the rural West.

Meanwhile in a forest in West Danby, NY, biologists have discovered a form of fungus that can be used to prevent rejection of transplanted organs. The discovery, which supports the need to preserve biodiversity and endangered species, has spurred a local conservation group, the Finger Lakes Land Trust in Ithaca, to "capitalize" on the mold's potential by creating "the first preserve set aside specifically for chemical prospecting outside the tropics," the *New York Times* reports.

The fungus species used to make the billion-dollar drug cyclosporin occurred in an often-visited forest near Cornell University. This "is evidence, scientists say, of how poorly known many organisms still are even in well-studied habitats." Cornell biologist Thomas Eisner and colleagues at the Cornell Institute of Research in Chemical Ecology plan to lead the search for "interesting molecules" in the new preserve.

Schering-Plough Corp., a major pharmaceutical company, has expressed interest in becoming a partner in the search once the new reserve is established, perhaps providing funds for research and a return on royalties for conservation. Eisner said, "This could certainly be a model for setting up other preserves and any preserve could lend itself for this purpose. I sincerely hope we've started something"

Source: Greenwire Vol. 6, Nos. 129, 130, 136, 137, 139 and 142

Grazing Issues/ Grasslands Banking

U.S. District Judge Aencer Haggerty on September 30th ruled that the U.S. Forest Service cannot issue permits for grazing on federal lands in OR unless it first obtains assurances from the OR Dept. of Environmental Quality that grazing will not pollute streams and rivers.

In the ruling, Haggerty granted a summary judgement in a lawsuit filed in 1994 by the OR Natural Desert Association, the OR Natural Resources Defense Council, the Pacific Rivers Council, the Portland Audubon Society and Trout Unlimited that argued that livestock producers need to comply with state Clean Water Act standards. The ruling could be extended to cover logging, road-building, mining and other activities that contribute to pollution from sources other than pipes.

Meanwhile, after three months of talks with ranchers and environmentalists, OR Gov. John Kitzhaber (D) on November 18th announced an agreement to ask the state legislature to pass a \$40 million plan to protect streams from livestock damage and pollution. The agreement would include as much as \$35 million to help farmers initiate water protection measures and \$5.8 million to add 38 employees to the state Dept. of Agriculture and the state Dept. of Environmental Quality to help carry out the plan.

Kitzhaber warned that if the state does not move to clean up its streams, the USEPA might assume responsibility for water quality management in OR. On November 5, OR voters rejected a ballot measure that would have required ranchers to keep animals out of waterways that fail to meet clean water standards. Kitzhaber "had urged voters to reject the measure" to give ranchers and enviros a chance to finish planning a voluntary restoration plan.

"In a major victory" for environmental interests in the Southwest, the Bureau of Land Management (BLM) has

agreed to study how cattle grazing along NM streams may be harming several endangered fish and bird species. The agreement, signed in early November by Sante Fe federal Judge James Parker, "raises the possibility" that the BLM will curtail cattle grazing along 600 miles of riparian zones under the agency's control.

The agreement stems from a lawsuit filed in May by Forest Guardians against the BLM for not acting quickly enough to conduct "biological opinion" studies on the effects of grazing. Under the deal, the BLM has until March to study the impact of grazing on riverside-dependent species. Species to be studied include the Southwestern willow flycatcher, the Mexican spotted owl, the Rio Grande silvery minnow, the loach minnow, the spikedace minnow and the Pecos bluntnose shiner.



In a separate action, Parker turned down a bid by ranching interests to intervene in the suit. Bud Eppers, head of the NM Public Lands Council, which represents 3,500 NM ranchers said, "It's regrettable that the people most affected by this can't be participants in the negotiations of how this is going to be handled".

In the meantime the *New York Times* and the *W.S. Journal* report that an alliance between ranchers, environmental groups and government agencies has been formed to restore nearly one million acres of rangeland in southern AZ and NM.

The effort, "cited by Interior Secretary Bruce Babbitt and others as a possible road map for escaping the endless polarization of national environmental

feuds," is being spearheaded by the Malpai Borderlands Group, a group of ranchers concerned about restoring the health of public and private grazing lands and protecting the region from urban sprawl.

The high desert region is divided into more than 30 ranches and is "probably the richest [biological] area of this size in the United States," according to Dr. Wade Sherbrooke of the American Museum of Natural History. Sixty species are found only in this region.

Rancher Warner Glenn and his wife Wendy formed the Malpai Borderlands Group in 1993, embracing "a former dreaded enemy," The Nature Conservancy (TNC), in hopes of reversing decades of overgrazing and getting fellow ranchers "off the defense" in Western land-use conflicts.

One innovation being tried by the Malpai group is "grasslands banking" for lands depleted by grazing and drought. Under an agreement, ranchers can grant a conservation easement on land they own to the Malpai group. The easements ban major development on ranch lands forever, while still permitting sporadic grazing. Then, for a small fee, ranchers can rest their own pastures by grazing cattle on an abandoned tract in NM known as Gray Ranch. Four ranchers have joined the grasslands program so far.

The alliance has also taken up fire suppression for the first time as a means of improving rangeland health. Talks between ranchers and government officials after a 1992 fire on federal land led to the area's first prescribed burn of 6,000 acres in June 1996. A second prescribed burn of 9,000 acres is in the planning stages.

Scientists have been pleased with the opportunity to take biological inventories of the region, discovering endangered Chiricahua leopard frog populations. And many ranchers have been "charmed" upon learning of biological treasures on their land, according to Ben Brown of the *Animas Foundation*.

Many ranchers involved in the effort

have praised the shift toward working with ecologists. Wendy Glenn said, "There are irreversible changes going on in the West. ... Ranchers can change with them, or get steamrolled." Rancher W.H. Walter said, "The way I see it, all I've done is protect my land from subdivisions and keep myself in business." TNC's John Cook said, "We think ecologically sound, economically viable ranching may be all that stands between these open spaces and tract housing."

But other ranchers wary of a middle ground have attacked the group's efforts. Outspoken critic and local rancher Wallace Klump has called the efforts "the work of Satan." Environmental groups such as *Gila Watch* and *Greater Gila Biodiversity Project* say that the coalition's efforts have not been enough and they are pursuing lawsuits and other initiatives to further reduce grazing.

Source: Greenwire Vol. 6, Nos. 101, 107, 138 and 142

Grand Canyon Update

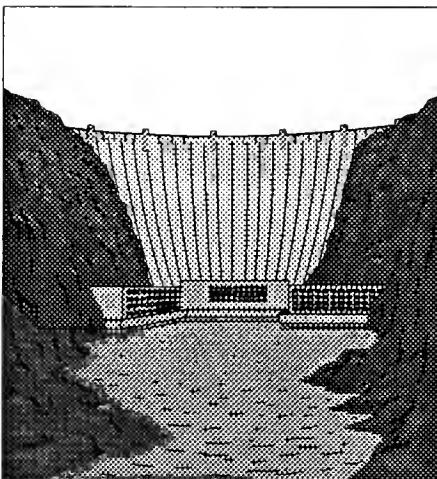
"Marking a 'sea change' in the way the nation's dams are operated," Dept. of the Interior (DOI) Secretary Bruce Babbitt has signed new regulations permanently giving environmental concerns precedence over power generation in the management of Colorado River flows through the Grand Canyon. The measure, which restricts "a power cooperative's ability to send wildly fluctuating amounts of water through the Glen Canyon Dam, is expected to serve as a blueprint for dam operations across the United States".

The changes, intended to reduce erosion in the Grand Canyon, came after six years of research into the environmental effects of AZ's Glen Canyon Dam, which began operating in 1963. The studies concluded that the canyon had been choked by thirty years of drastic daily fluctuations in water releases from the dam and the absence of natural seasonal flooding.

Babbitt also announced that an intentional flood sent through the canyon in March 1996 brought about "significant improvement in the size

and number of the river's beaches" and "creation of backwater habitat for endangered species." The DOI plans to periodically repeat such flooding to rebuild beaches and habitat.

Power rates in the West are not



expected to be greatly affected since they have already risen more than 25% since interim dam-operation restrictions were put into effect in 1991.

However, on a different note, Greenwire reports that the scientist who led the DOI's March 1996 Grand Canyon project quit his job on November 22, "saying the event was more hype than substance and the Interior Department is not committed to making changes at other dams."

Dave Wegner, who worked for the Bureau of Reclamation (BOR) for 20 years, said he decided to quit after the DOI disbanded the research group he oversees. Since 1982, Wegner's Glen Canyon Environmental Studies group has studied the effects of the Glen Canyon Dam on the Grand Canyon and Colorado River. "It is the nation's premiere source of research and information on the impact of dams on the environment," reports the AP.

Wegner said the DOI's decision to disband his group contradicts the agency's public position that it has transformed the way it manages dams so that they cause less environmental harm. Wegner said, "What upsets me is that

we had been led to believe we would be taking our expertise, our technology and applying it to other rivers and dams and other systems through the U.S."

But BOR officials said Wegner's group was disbanded because its mission had been completed. In its stead will be the Grand Canyon Research and Monitoring Center to oversee operations at the dam.

Sources: Greenwire Vol. 6, No. 113 and 145

Water Rights for Endangered Fish

A settlement approved October 1 by Judge Thomas W. Ossola of the Division 5 Water Court in Glenwood Springs, CO promises to benefit endangered Colorado River fish while resolving a complicated water rights dispute.

The settlement, which involves operation of Green Mountain Reservoir and various Grand Valley diversion dams and pumping and power plants, will help endangered fish by increasing dry-season flows in the 15-mile reach of the Colorado River between Palisade, CO, and the Gunnison River confluence.

Under the settlement, the Bureau of Reclamation (BOR) agreed not to exercise its water right for the Grand Valley Power Plant during the irrigation season, which will benefit upstream farmers or cities, even when their water rights are "junior." The *Grand Valley Irrigation Company*, *Orchard Mesa Irrigation District*, and *Grand Valley Water Users Association* made a similar agreement not to exercise their water rights against



upstream beneficiaries of a 66,000 acre-foot "pool" of water from Green Mountain Reservoir during the same season.

"The agreement is a win-win situation," said Brent Uilenberg of the BOR. "It allows more efficient use of irrigation water in the Grand Valley without risking loss of water rights, it keeps more water on the Western Slope, improves water quality and the supply of water for endangered fish and allows upstream junior right holders to protect their ability to use Colorado River water."

The three irrigation companies benefit further by maintaining their current diversion rates and by gaining more involvement in future decisions on management of Green Mountain Reservoir water. During years when the pool will not be entirely used, some of the excess will be delivered to the Grand Valley Power Plant, and then to the Colorado River, indirectly benefitting endangered fish. Also, water delivered from this upstream reservoir is colder and has fewer minerals and less sediment and therefore is higher quality, which will benefit irrigators and municipalities that depend on the Colorado River for water.

The higher flows will improve conditions for endangered Colorado squawfish, which are routinely found in the Colorado River near Grand Junction. The other endangered species targeted for recovery are razorback suckers, which have declined seriously but are being restocked in the Colorado River; the humpback chub, found downstream from this reach of the Colorado; and the bonytail, which is very rare.

"As recently as the mid 1980s parts of that stretch of the Colorado have occasionally dried up in summer," said John Hamill, a U.S. Fish and Wildlife Service biologist who directs the Upper Colorado River Recovery Program. "The agreement will enhance flows at a critical period of the year -- late summer and into fall." The settlement is the product of five years of negotiation and has been signed by all 42 parties involved in the case.

Contact: Connie Young, U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, CO 80225, (303) 236-2985, ext. 227

Floodplain Wetlands for Endangered Fish

Up to 1,200 acres of wetlands along the Green and Colorado rivers could be restored for use by endangered fish in 1997, according to budgetary decisions made in early October by the top-level committee of a multi-agency program to recover the rare fish.

A total of \$1.9 million will go toward making wetland areas available to Colorado squawfish and razorback suckers. About \$550,000 will be set aside for the U.S. Fish and Wildlife Service (USFWS) to purchase easements from willing landowners for about 1,000 acres of riverside flood plains along the Green River downstream of Dinosaur National Monument. Another \$200,000 is available for easements on a total of about 200 acres along the Colorado River between the Gunnison River and Rifle, CO.

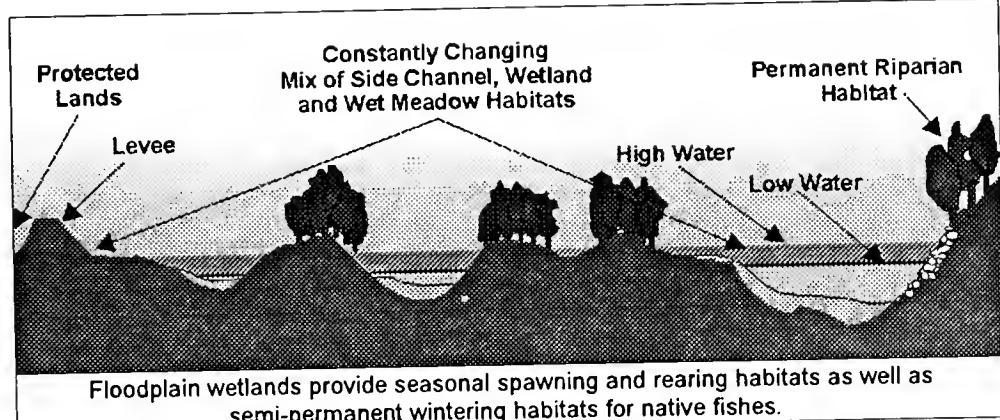
Young endangered fish have been found to grow significantly faster in the warm, shallow, slow-moving waters of these floodplain areas, which are chock-full of the microscopic animals that the young fish eat. Wetlands are known to filter water pollutants, control flooding and provide habitat to hundreds of species of wildlife and plants. Reviving these areas would therefore provide spin-off benefits to the river and to the human environment.

"Restoring these flood plain habitats should provide significant benefits to endangered fish while also rebuilding the river ecosystem for other native fish, riparian wildlife and for the human population," explained John Hamill, USFWS director of the Upper Colorado River Recovery Program.

As part of this project, researchers are studying the effects that selenium has on endangered fish. Selenium, an element that animals need in trace amounts but that can cause deformities and reproductive failures in larger quantities, is present in many riverside wetlands in the upper Colorado River drainage. Identifying the level that is toxic to endangered fish is crucial to determining which floodplain areas can be used as fish habitat.

The committee also agreed to fund several other projects for FY97:

- The Bureau of Reclamation will use \$600,000 to build a fish passageway at the Grand Valley Irrigation Company Diversion Dam on the Colorado River. This will allow Colorado squawfish and razorback suckers to pass over this structure at low flows.
- The UT Division of Wildlife Resources is to receive \$35,000 to stock bonytails into the Colorado River at Professor Valley. Bonytails are nearly extinct in the upper Colorado River Basin.
- The Ouray National Fish Hatchery in UT will receive about \$3 million to build 10 additional half-acre ponds for endangered fish and to operate and make improvements to the hatchery facility. The Grand Valley Fish Facility in Colorado will receive \$220,000 for hatchery improvements and



operations; the UT Division of Wildlife's "Wahweap" hatchery near Page, AZ, is slated to receive \$100,000 for similar purposes. These hatcheries raise endangered Colorado squawfish, razorback suckers, humpback chub and bonytails for research and stocking.

- The USFWS will continue its five-year study on stocking the Gunnison and Colorado rivers with 4-, 8- and 12-inch razorbacks to determine which size of fish has the greatest survival.

Scientists believe the decline of these fish is an indicator of environmental degradation and that improving conditions for the fish also will benefit many other wildlife species and will help maintain river flows that enhance recreation and tourism.

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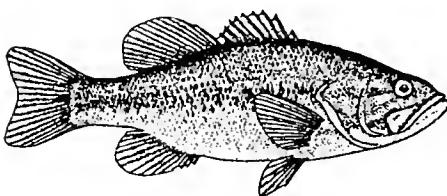
Non-Native Fish Stocking Agreement

An agreement on procedures for stocking non-native fish in the upper Colorado River Basin received final approval in early October from decision makers in a multi-agency program to recover endangered fish.

The Implementation Committee of the Upper Colorado River Recovery Program endorsed the stocking procedures, which had been developed over the past three years by the U.S. Fish and Wildlife Service (USFWS) and state wildlife agencies in CO, UT and WY. The CO Wildlife Commission approved the procedures in September. A formal agreement is expected to be signed within a few weeks.

The document specifies:

- when non-native fish species can be routinely stocked,
- when stocking is prohibited and
- when case-by-case reviews are required.



"Largemouth Bass"

"In negotiating these procedures, some groups wanted to prohibit all stocking of nonnative fish, while others wanted no restrictions whatsoever," said John Hamill, a USFWS biologist who directs the Upper Colorado River Recovery Program. "It hasn't been easy, but I believe we have come up with a reasonable compromise that preserves sport-fishing opportunities while improving conditions for endangered fish."

To help maintain sport-fishing opportunities in western CO, the USFWS has committed to providing 40,000 catchable-size trout each year for stocking in public ponds that are not considered suitable for stocking warmwater fish.

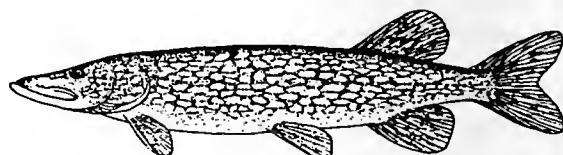
The procedures follow:

- Trout can be stocked anywhere in the upper Colorado River Basin except for river reaches in "critical habitat" for endangered fish.
- The CO Division of Wildlife can implement plans for stocking non-native fish into Chipeta Lake and into the following reservoirs: Rio Blanco, Purdy Mesa, Mack Mesa, Crawford, McPhee and Harvey Gap. Harvey Gap also can be stocked with tiger muskie.
- Largemouth bass, bluegill, black crappie and triploid grass carp can be stocked above the 50-year floodplain in waters that are not connected to the river or are adequately screened to prevent the fish from escaping into the river. (Triploid grass carp are a sterile form of grass carp often used to

control vegetation growth in ponds.)

- Corn Lake, upper Connected Lakes and Duke Lake, near Grand Junction, CO, and other waters that are within the 50-year floodplain and are connected to the river can be stocked with these same four fish species as long as berms are constructed to elevate the ponds above the 50-year floodplain and screens are installed.
- Channel catfish and smallmouth bass may be stocked in any water upstream of Flaming Gorge Dam.
- Warmwater fish may be stocked into Strawberry Reservoir and certain other standing waters in UT.

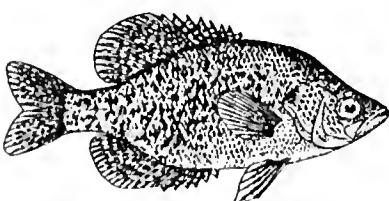
The procedures prohibit stocking non-native species within river reaches designated as critical habitat for endangered fish. Also off-limits in the upper Colorado River Basin is the stocking of black bullhead, yellow bullhead, common carp, flathead catfish, green sunfish, northern pike, red shiner, white crappie and wiper. In a related project, \$155,000 has



"Northern Pike"

been set aside to "reclaim" up to 25 ponds adjacent to the Gunnison and Colorado rivers. State biologists will work with willing landowners to remove non-native fish species that compete with endangered fish. Preliminary plans then call for restocking the ponds with endangered fish or trout, which generally do not create problems for endangered Colorado River fish.

"The procedures allow widespread stocking of trout and stocking of a variety of warmwater fish species in seven Western Slope reservoirs totaling more than 10,000 surface acres," said Mike Stempel, USFWS. "This is an example of the USFWS's commitment not only to endangered fish recovery but also to maintaining and enhancing recreational fishing."



"Black Crappie"

federal agency's commitment to a policy dealing with the Endangered Species Act and recreational fisheries management, Stempel said. The policy is part of a larger federal effort to improve recreational fisheries required by an executive order signed by President Clinton last year.

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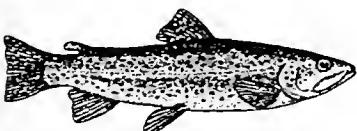
Water Purchased to Restore NV River

In a new use of loan money available under the federal Clean Water Act, local and state governments in NV, federal officials and an Indian tribe have agreed to buy water to help restore the Truckee River, which runs through the city of Reno.

The agreement, signed on October 10, allows local and federal governments to spend \$24 million to buy the rights to release water from upstream reservoirs to replenish the Truckee in the summer. During dry periods, most of the Truckee's water presently comes from a sewage treatment plant in Reno. The extra water will help dilute the sewage treatment wastewater and bring the river into compliance with water-quality standards.

The agreement could also improve habitat for two endangered species, the Lahontan cutthroat trout and the cui-ui fish. USEPA spokesperson Loretta Ucelli said the deal is "the first-of-its-kind use of clean-water loans" to buy water for a river. Charles Wilkinson, a water law expert at the University of Colorado Law School, praised the agreement, "I don't think there is any other place in the West where the truly daunting issues of water have been taken on with so much success".

Source: Greenwire Vol. 6, No. 127



"Rainbow Trout"

Flood Damage Repair Damages Streams

Although a flood in January 1996 "swamped" New York's western Catskills area, clogging vital trout streams with silt, according to the *New York Times* some people have complained that the flood relief work "was almost as harmful as the flood".

After the flood, federal officials appropriated \$8.3 million in state emergency funds for the cleanup in Delaware and Sullivan counties. Local residents "launched an armada" of bulldozers and excavators to reopen clogged roads and culverts and clear muck out of the "glistening brooks and winding rivers" that form the "heart" of the region's tourist economy.



But conservation groups like Trout Unlimited, say the gravel and silt disturbed by excessive repair work ended up blocking trout from spawning areas. Trout Unlimited's Jock Conyngham said enforcement of environmental regulations was lax. NY environmental and public works officials agree that some of the work created as many problems as it solved. But they contend that given the public demand to quickly fix the damage, workers did the best they could. With the spawning season just starting, "there is no evidence yet" of a falloff in the trout population.

Source: Greenwire Vol. 6, No. 111

Mudslides, Clear Cut Forestry and Fishery Management

Oregon forestry officials have confirmed that a mudslide that killed four people in a home near Roseburg, OR in early November came down from a steep hillside that had been clearcut 10 years earlier. However, officials said there is no proof that clearcutting caused the slide, attributing it instead to the heavy rainfall that occurred for 10 hours beforehand.

Officials said that *Champion International*, which owned the land in the late 1980s, logged and reforested the area in compliance with the state Forest Practices Act. However, environmentalist say that the OR Dept. of Forestry's recommendations allow harvesting on steep, unstable soils, making mudslides stronger and more prevalent. They point to an aerial survey conducted after last winter's flooding which shows evidence of "an overwhelming number" of landslides that occurred in areas previously cleared or where logging roads have been built.

In the meantime in the state of WA, after months of discussions leaders of state timber, tribal and environmental groups recently "hammered out a compromise" on a major stream-protection rule, which has subsequently been adopted by the state Forest Practices Board.

Tribal leaders and enviros had argued that state maps incorrectly labeled thousands of miles of streams as devoid of fish, an error that allowed streamside logging to occur, damaging fish habitat. Under the compromise, hundreds of streams are now presumed to contain fish, unless landowners can prove otherwise.

The group also agreed to something "potentially much more momentous": a long-term, comprehensive study of ways to protect fish throughout the state's forested lands, with the goal of keeping them off the federal endangered species lists.

The National Marine Fisheries Service next year plans to study several

salmon and trout runs to determine whether federal protection is necessary. Such a listing could have "enormous ramifications" for logging, farming and urban development.

Source: Greenwire Vol. 6, No. 145

Appalachian Clean Streams Initiative

Southeastern OH's Monday Creek will be one of the first streams targeted for cleanup under the U.S. Office of Surface Mining's (OSM) Appalachian Clean Streams Initiative. The program is the agency's "first effort to address the problem of acid mine drainage in streams."

The OSM has announced \$650,000 for stream cleanups in OH, half of which will be used for Monday Creek. About 7,500 miles of streams are estimated to be degraded by mining in the Appalachian region, including 660 miles in OH.

Monday Creek drains a 116 mi.² watershed before emptying into the Hocking River near Nelsonville. Its water is so acidic that almost half of its 27 mi. length supports no fish. One of its tributaries runs through a 20 acre coal slurry pit "surrounded by 30 ft. hills of mining refuse."

The Monday Creek Restoration Project will attempt to restore the watershed, which suffered from 50 years of unregulated mining and "a few more decades of neglect." The cleanup has received \$300,000 from the USEPA and another \$200,000 from *American*

Electric Power, Ohio University and other sources.

Source: Greenwire Vol. 6, No. 126

Rhine/Mississippi River Info Exchange

Although thousands of miles part, the Rhine and Mississippi Rivers share similar histories long celebrated in literature and song. They also share some less romantic attributes - polluted water, frequent flooding, loss of biological diversity, and millions of people who rely on them to sustain their lives. To alleviate some of those pressures, World Wildlife Fund (WWF) recently launched an exchange program to restore the ecological balance to rivers that are stretched to the limit by traffic, people, and pollution.

WWF's Rhine/Mississippi Exchange program is allowing key river managers and decision makers in Germany, the Netherlands, and the U.S. to share the latest information and technological knowhow on integrating environmental and economic objectives into the day-to-day management of these two majestic rivers. Their goal is to meet water quality objectives and restore plant and animal communities while reducing flood damage and improving commercial transportation.

Funded by WWF and the *McKnight Foundation*, river managers and government experts from the U.S. traveled to the Rhine River Basin in September. The U.S. experts visited

harbors and exhibition centers, studied recreation areas and nature reserves, and learned about challenges and solutions to river quality ranging from climate change to clay brickmaking. Next summer, a group from the Netherlands and Germany will travel to the Mississippi River Basin.

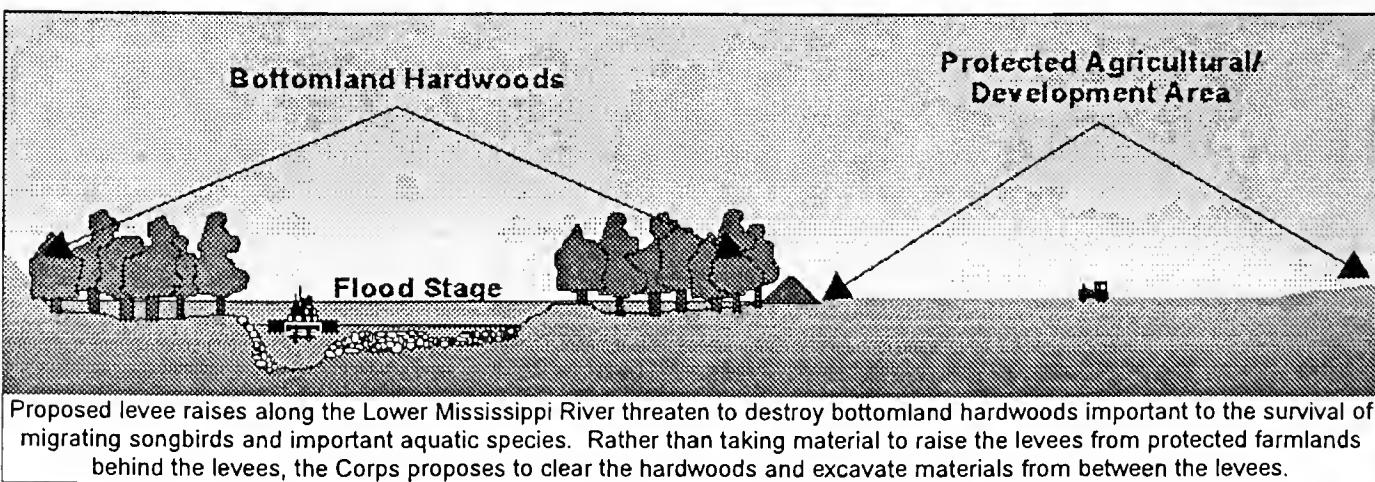
"Every American is touched in some way by the Mississippi River, and every European by the Rhine- and everybody has a stake in how well they are taken care of," said Constance Hunt, who directs WWF's freshwater conservation work in the U.S. "We want to see restoration of these watersheds as part of the solution to flood damage, in addition to water quality enhancement and biodiversity conservation."

Source: Focus (WWF Newsletter), Vol. 18, No. 6

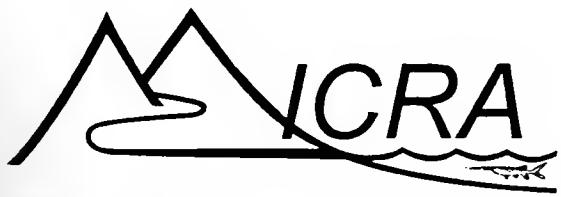
Lawsuit Filed Over LMR Levees

Eight environmental groups on October 2nd filed a suit in U.S. District Court in New Orleans to stop the U.S. Army Corps of Engineers (Corps) from digging up thousands of acres of bottomland hardwood wetlands along the lower Mississippi River.

The Corps plans to use the soil as construction material for a levee-raising project meant to prevent flooding in LA, AR and MS. A Corps spokesperson said currently deteriorating levees along the river could fail in a major flood, causing



Proposed levee raises along the Lower Mississippi River threaten to destroy bottomland hardwoods important to the survival of migrating songbirds and important aquatic species. Rather than taking material to raise the levees from protected farmlands behind the levees, the Corps proposes to clear the hardwoods and excavate materials from between the levees.



Mississippi Interstate Cooperative Resource Association
P.O. Box 774 - Bettendorf, IA 52722-0774 - (319) 359-3029

READER'S SURVEY

This "Reader's Survey" is our biannual effort to identify our regular readers, to streamline our mailing list in order to reduce printing and postage costs, and to better serve our readers by soliciting their views. In order to ensure that your name remains on our mailing list, please answer the questions below and return this form to our office at your earliest convenience (preferably before January 15, 1997 in order to make the mailing deadline for our next issue). If you do not respond we will assume that "*River Crossings*" is not being read, and your name may be dropped from our mailing list. We look forward to hearing from you, and especially appreciate receiving your written comments.

I enjoy reading "River Crossings", and wish to remain on your mailing list.

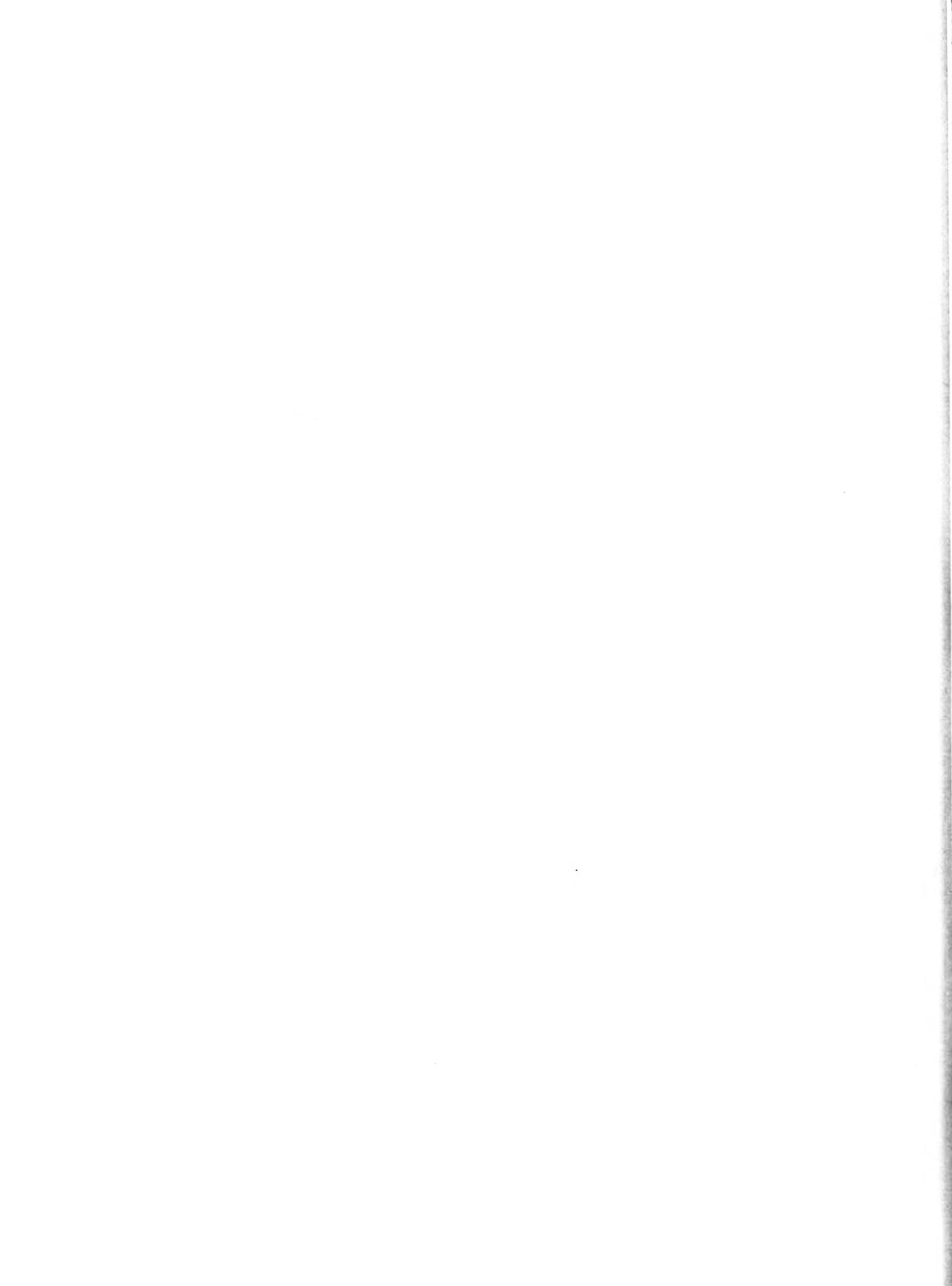
I do not wish to remain on the "River Crossings" mailing list.

Additional Comments:

Thank you for your assistance and continued interest in river issues.

Sincerely,

Jerry L. Rasmussen
Coordinator/Executive Secretary



"catastrophic consequences."

But environmental groups claim the project will destroy wildlife habitat and leave behind barren pits. Robert Apple of the *Arkansas Wildlife Federation* said, "We've already lost 80% of bottomland wetlands along the lower Mississippi River, and almost 90% in Arkansas alone."

The groups, along with the USEPA, the U.S. Fish and Wildlife Service and the LA Legislature, have asked the Corps to reevaluate the environmental impacts of the project before proceeding.

Source: Greenwire Vol. 6, No. 111

Small Yellowstone River Dam Raises Uproar

The U.S. Army Corps of Engineers granted permission to a Montana rancher in mid November to build a temporary diversion dam on a waterway created during June flooding of the Yellowstone River. But the project has raised questions about whether dams should be allowed on the Yellowstone at all.

When rancher Jerry O'Hair first proposed the dam, many fishers "applauded the idea." Even The Nature Conservancy (TNC) offered to raise money to help O'Hair build the dam, which was needed to restore Armstrong's Spring Creek, a famous trout stream where anglers pay \$50 a day to fish. But after opponents argued that blocking the river for commercial fishing purposes would set a bad precedent, TNC withdrew its support.

Meanwhile, supporters say diversion dams are nothing new and point to four that already exist on the river. Robert Auger, a local "riverkeeper" who has won awards for his river restoration efforts, said such structures do not block the river's flow, but obstruct it enough to allow farmers and ranchers to divert water for irrigation. He worries that if O'Hair is forced to sell the land, the trout creek will become off-limits to the public.

Source: Greenwire Vol. 6, No. 144

Virginia Coal Waste Fish Kills

A massive October 24th mountain coal field accident that sent "millions of gallons" of mining sludge into creeks and streams in far southwest VA killed fish along nine miles of waterways and threatens the "remaining state stronghold of several rare mussels."

The spill has "blackened" clear waters as far as 50 mi. from the spill, which began when a 3 acre slurry pond run by a division of St. Louis-based *Arch Mineral Corporation* caved into an abandoned mine shaft. "The roaring river of sludge ... ran a half-mile underground before blasting out a hole at a rate of 3,000 gallons a minute." The company plugged the hole after some 36 hours.

But the VA Dept. of Environmental Quality said that the escaped slurry has killed about 11,200 fish and that two endangered species of fish, as well as the mussels, are at risk downstream.

Arch Mineral officials said the accident was the worst in company history. Senior VP Jeff Quinn said, "We obviously take full responsibility." He said the company, the 10th largest coal producer in the nation, is committed to doing "whatever is necessary to remedy the situation".

In another incident on November 26, coal waste blackened 20 additional miles of streams in southwest Virginia. An undetermined amount of "water laced with fine coal" began spilling at about 5 a.m. from a *Consolidation Coal Co.* waste pond, rushing into an abandoned underground mine and spilling into a creek that leads to Levisa Fork in Buchanan County.

The spill occurred when a barrier between the pond and the abandoned mine failed, but the exact cause is still under investigation. VA Dept. of Mines, Minerals and Energy spokesman Mike Abbott said the accident was "very serious" and disciplinary action will be taken. The

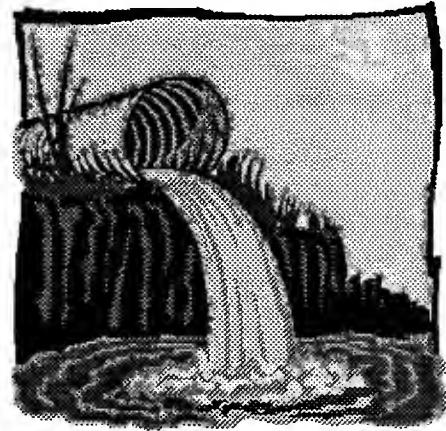
accident is similar to the October 24 spill of more than six million gallons near Lee, VA, which killed more than 11,000 fish.

Abbott said the "tainted streams are not used for drinking water" and so far state officials are not reporting fish kills for the November 26 incident. The flow was expected to stop when it crosses the state line and reaches an impoundment in Kentucky.

Source: Greenwire Vol. 6, No. 143 and 146

Polluted U.S. Waterways

Two private organizations -- the *Environmental Working Group* (EWG) and the *U.S. Public Interest Research Group* (PIRG) -- recently analyzed the USEPA's annual inventory of industry's self-reported toxic discharges. The EWG/PIRG analysis reported that an estimated 1.5 billion lbs. of toxic chemicals were discharged into U.S. waterways from 1990 to 1994.



The groups analyzed industry data reported under the USEPA's Toxics Release Inventory (TRI). During the four-year period, sources released more phosphoric acid, ammonia and sulfuric acid than any other TRI chemicals, at 544 million lbs., 188 million lbs. and 122 million lbs., respectively. In addition, 30 million lbs. of carcinogens, reproductive toxics and "persistent toxic metals" such as arsenic, lead, chromium and zinc were discharged.

Some 700 million lbs. of toxic chemicals were reported dumped into the Mississippi River, more than twice the amount released into all other U.S. waters combined. Ninety percent of toxic pollution came from three fertilizer plants in LA, which dumped 643 million lbs. of chemicals from 1990 to 1994. The next most polluted waters were spots on the Pacific coast, the Ohio and Tennessee rivers, the Houston Ship Channel, AK's Ward Cove, the Savannah River between GA and SC, and the Delaware River between NJ and PA.

The report also provides the "first estimates" of toxic material transfers to sewage treatment plants. More than 1.8 billion lbs. of toxic chemicals -- almost twice the amount released directly during the same time period -- were sent to sewage treatment plants from 1990 to 1994. The USEPA does not list these transfers as releases under the TRI, but the agency estimates that as much as 25% of the toxics sent to sewage plants eventually flow into waterways.

The authors note that "the massive legal dumping represents only a fraction of the overall toxic problem." Many polluters, including sewage treatment plants, mines, utilities and municipal incinerators are not required to report their discharges.

The report suggests that one approach to cleaning up rivers is targeting big polluters. For example, one polluter -- *IMC Agrico Co.* -- accounts for all reported discharges in 80% of the waterways. Other "top polluters" are Arcadian Fertilizer LP, Louisiana-Pacific Corp. and the *Mobil Mining and Minerals Co.* The authors also recommend expansion of the TRI to cover any facility that "uses or releases a toxic substance that may pose a risk to human health or the environment" and full disclosure rules for all reporting facilities.

Meanwhile, the Clinton Administration has announced that it may launch a large cleanup project for the Mississippi River. The "still-sketchy" plan, under consideration by the Interior and Justice departments, "would echo last term's cleanup effort in the Florida Everglades and would

involve a coordinated attack on polluters by U.S. attorneys." The goal, said one official, is to make the river "as clean as it was in the days Huck Finn swam in it".

Source: Greenwire Vol. 6, No. 101 and 139 and U.S. News & World Report Sept. 30, 1996

Pipeline Companies Fund Creek Restoration

Boosted by a \$2.8 million settlement with two pipeline companies, the U.S. Fish and Wildlife Service (USFWS) will join the States of OH and IN in a full scale restoration effort for a biologically rich stream fouled by a diesel fuel spill in 1993.

A ruptured pipeline spilled 30,000 gallons of diesel fuel into Fish Creek in northeastern IN and northwestern OH, killing fish, endangered mussels, and other wildlife and fouling a waterway considered one of the most biologically diverse in the region.

The spill contaminated a 7 mi. stretch of the creek killing a variety of wildlife including muskrats, migratory birds such as kingfishers and wood ducks, sport and nongame fish, crayfish, and frogs. The oil also threatened populations of the 30 species of freshwater mussels.

Fish Creek is the only known home of the endangered white cat's paw pearlymussel. The creek also harbors two other Federally endangered mussels, the clubshell and the northern riffleshell, and several state endangered mussels. The presence of these and other mussel species is testimony to the creek's high water quality and the diversity of wildlife it supports.

Prior to the spill, Fish Creek was the focus of a partnership of public and private agencies to conserve and protect the watershed's rare and endangered species. The Nature Conservancy, the USFWS, resource agencies in OH and IN, the Consolidated Farm Services Agency, the Natural Resources Conservation Service, and local Soil and Water Conservation districts are cooperating

in the Fish Creek Preservation Project to ensure the future of this rich ecosystem.

The agencies are working to complete a draft restoration plan which will be made available for public comment. The plan will suggest strategies to improve water quality and bring back mussel and wildlife populations to pre-spill levels, implement local education programs, and protect the waterway from future harm.

Source: Fish and Wildlife News, October 1996

Massachusetts River Cleanup

After two years of negotiations among federal, state and local officials and activists, the USEPA plans to announce a \$145 million cleanup plan to remove 170 acres of heavily contaminated sediments from a river in New Bedford, MA.

The plan was delayed years by "wrangling" over a 1992 EPA plan to incinerate the most contaminated sediments. The sediments that would be pulled under the EPA's new plan were never scheduled to be burned. "But the uproar" over the 1992 proposal to burn some sediments -- about five acres that contain what is believed to be the highest underwater concentration of PCBs in the world -- "forced" the EPA to drop the plan. The battle attracted national attention "as an example of the EPA showing less concern for hazardous waste sites in neighborhoods with large minority populations."

The new EPA plan "essentially" cancels the incinerator. According to Kristen Conroy, "Everyone was so focused on the incinerator that we decided it would be better to wait." Under the plan, the EPA will agree to remove "even more" contaminated sediment than it originally proposed and not to contain the waste in a lagoon frequented by wildlife. The agency, along with *Eco Logic of Michigan*, is exploring ways to neutralize the PCB-laced sediments.

Source: Greenwire Vol. 6, No. 130

Chemical Pollution, Hormones and Fish

Scientists released a report on November 18th citing "disturbing" evidence that common chemical pollution may be harming the reproductive systems of fish in Lake Mead and 20 other sites across the U.S. The lake, which straddles the border of NV, AZ and CA, attracts 7 to 8 million visitors a year and is a "major source of drinking water for Las Vegas and southern California." Researchers from the U.S. Geological Survey (USGS) sampled carp from areas of Lake Mead that receive much of the treated and untreated waste from the Las Vegas area, including organic chemicals from wastewater, pesticides and industrial chemicals. Evidence of hormone disruption was revealed by "female egg protein in blood plasma samples of male carp." The study was released at the annual meeting of the Society of Environmental Toxicology and Chemistry in Washington, D.C.



This research supports a "growing body of science" indicating that chemical contaminants can feminize male animals and "[wreak] havoc with sexual development in several types of wildlife." Researchers are also "exploring possible connections between chemical contaminants, low sperm counts and high rates of prostate and testicular cancers" in humans.

USGS chief biologist Dennis Fenn said, "These findings suggest the potential for a significant problem." But Alan O'Neill, Supt. of the Lake Mead

National Recreation Area, called for more research saying, "We want to stress that Lake Mead has outstanding water quality".

Routine measurements of water pollution in Lake Mead by the Las Vegas Water District show "almost undetectable levels" of possible hormone disrupters. But scientists have found such compounds can harm hormonal systems even at very low levels.

Meanwhile, a government sponsored study published in November in the United Kingdom (UK) found that, human "Female hormones are so potent" that they are causing fish living near sewage outfalls in UK rivers to change sex.

Scientists from Brunel Univ. and the Ministry of Agriculture found three human female hormones in effluent from sewage works: estrone and 17B estradiol, which are excreted in women's urine, and, at much lower levels, ethinyl estradiol, used in some birth-control pills. Although the concentrations of hormones found in effluent are "extremely low," they are still high enough to make male fish start producing egg yolk protein, the researchers said.

The study "establishes" that the natural hormones are causing the fish feminization -- "not any of the tens of thousands of other chemicals found at low concentrations in sewage effluent." The finding is "significant" because some scientists think a wide range of synthetic chemicals used in detergents, plastics and farming can act as estrogen mimics, reports the *London Independent*. Estrogen mimics have been linked to falling sperm counts in men, "genital malformations in boys" and other health effects. The news came as a "relief" to birth-control pill and chemical manufacturers.

The researchers also found that female hormones affect fish at "astonishingly" low levels -- less than one billionth of a gram/liter, or the equivalent of one gram of hormone in a small lake. The UK Environment Agency, which commissioned the research, is organizing further studies

to determine how female hormones may be affecting fish in rivers around the country.

But the Environment Agency "is so worried" about the results that it has already ordered water companies to find a way to neutralize the hormones in sewage works.

Source: Greenwire Vol. 6, Nos. 135 and 141

Genetic Engineering/ Pesticide Use

St. Louis-based *Monsanto Co.* has "faced a stampede" this year for its genetically engineered crops. The technology has been "heralded" as a way to reduce dependency on chemicals -- it was hoped that pest-resistant crops would be created. But environmentalists are protesting that, instead, some of the altered crops are resistant to pest-killing pesticides and are therefore boosting chemical use.

In particular, *Monsanto's* altered soybean is resistant to the company's top-selling pesticide, Roundup, and the company "faces rising concern about its strategy of pushing more pesticide rather than designing seeds that require less."



The so-called "Roundup Ready" soybean is now a "lightning rod" for environmental activists. Earlier this month, one protesting group dumped a bag of genetically engineered seed in front of the Chicago Board of Trade. And Greenpeace activists have sprayed a test plot of *Roundup Ready* soybeans near Atlantic, IA with pink

milk-based paint. In Europe, some enviro groups have called for labeling of genetically altered crops.

Dennis Keeney, Director of the Leopold Center for Sustainable Agriculture, fears that farming's focus on genetically altered crops is eliminating interest in more environmentally friendly strategies, such as deploying natural predators against pests.

Some scientists worry that as other companies introduce seeds immune to pesticides, the continued use of the crops will speed the evolution of tougher insects and weeds.

"Scattered reports" from Australia indicate that ryegrass has developed a resistance to *Roundup*.

But *Monsanto* Executive Vice President Hendrik Verfaillie says the overall environmental effect of genetically altered crops should be positive. The firm's pest-resistant cottonseed, for instance, has already had a negative impact on pesticide sales.

Regardless, the trend toward genetically altered crops appears strong. *Monsanto* plans to put Roundup Ready cotton and pest-resistant corn on the market. And "many predict that within five years, half of the Farm Belt might be planted with crops capable of making their own insecticide or withstanding weedkillers".

Source: Greenwire Vol. 6, No. 122

Property Rights vs Wetlands

In a "defeat" for property-rights groups, the U.S. Supreme Court has refused to consider whether a NC county school board was wrong to use the Clean Water Act "as a basis for taking over private property." The court turned down an appeal of a NC Supreme Court decision that upheld the Dare County Board of Education's condemnation of the land.

The case involved a high school that needed to expand its athletic field to be accredited by a regional association. The school's first two

expansion plans were stalled because they required filling in about three acres of wetlands in violation of environmental regulations, including the federal Clean Water Act. The school then proposed a "so-called mitigation plan," under which it would acquire privately owned property and convert it into wetlands to make up for the loss of wetlands at the site. But two of the families that owned the private land refused to sell, saying they planned to build retirement homes on the beachfront property.

The school board then condemned and took ownership of the property. A state trial judge backed the seizure, "saying the board was acting within its general condemnation authority." Two state appeals courts, including the state Supreme Court, upheld the decision.

Source: Greenwire Vol. 6, No. 130

Natural Resource Budgets for FY 97

In marked contrast to last year's harshly partisan budget battles, the 104th Congress in the waning days of its final session amicably reached agreement on spending priorities for FY97. The omnibus appropriations bill funds programs that in less interesting times would have been addressed in separate defense, interior (DOI), labor-health and human services, foreign operations, commerce, justice-state, and treasury-postal service bills. Congress earlier passed the Veterans Administration-Housing and Urban Development appropriations bill, which includes \$6.7 billion for the USEPA.

For the most part, the final compromise differs only slightly from Clinton's budget plan. The starting figures were derived from funding levels approved earlier this year by the House and Senate during consideration of individual appropriations bills, but last minute negotiations with the White House resulted in the attachment of \$6.5 billion in additional domestic spending sought by the Clinton Administration.

Operations programs of the National

Park Service (NPS), the Fish and Wildlife Service (FWS), and the Bureau of Land Management (BLM) will receive \$2.35 billion, an increase of \$98.2 million or 4.4% over 1996. This is 1.7% or \$49 million less than the President sought. The omnibus act provides no funding for Clinton's proposal for a \$100 million Everglades Fund to continue land acquisition programs in the region, but \$12 million was included in the regular NPS acquisition account. The act also rejects a \$111 million request for the full cost of restoring significant salmon runs in the Elwha River on WA's Olympic Peninsula by buying and removing the dams.

Major policy directives were mostly left out of this year's package. The once controversial mining patent moratorium, in place since FY95, was approved without debate. The provision bans the processing of new mineral claims for one year or until a comprehensive revision of the 1872 mining law that governs hard-rock mining on public lands is approved.

An attempt led by Rep. Elizabeth Furse (D/OR) to "defund" implementation of last year's timber salvage rider failed. The rider, the bane of environmentalists, directs the U.S. Forest Service (FS) and BLM to step up logging of dead and dying timber in an effort to control wildfires and improve forest health.

FY97 enacted spending for selected natural resource programs at the BLM, FWS, FS, and the NPS is displayed below. Spending enacted for FY96 and President Clinton's FY97 funding request are also shown. All amounts are in thousands of dollars (\$000) of budget authority.



BLM (\$000)

	FY96 Enacted	FY97 Request	FY97 Enacted
Mgmt. of Lands & Resources	566,537	575,892	572,164
Energy & Minerals	69,161	69,503	69,503
Range Management	49,983	52,252	52,052

Maintenance	30,100	32,754	32,754
Cultural Resources	11,000	12,059	11,995
Recreation	44,139	45,864	45,864
Wilderness Mgmt.	14,000	15,072	15,072
Recreation Resources	26,139	27,772	27,772
Resource Mgmt. Planning	8,500	8,544	6,000
Soil, Water & Air	17,000	22,091	19,591
Wild Horses & Burros	14,845	15,925	15,925
Wildlife & Fisheries	25,100	27,232	27,234
Land Acquisition	14,100	13,060	10,410
Acquisition Management	3,250	3,250	2,500
Construction and Access	3,115	3,103	4,333
Range Improvements	9,113	9,113	9,113
O&C Grant Lands	97,295	108,379	100,515
Payments in Lieu of Taxes	113,500	101,500	113,500
Wildland Fire Management	<u>235,712</u>	<u>247,924</u>	<u>252,042</u>
Total Agency	1,065,970	1,096,069	1,090,675

Overall, the BLM got a modest \$25 million boost this year. The omnibus act funds the management of land and resources at \$572.2 million, \$5.6 million higher than the FY96 level, but \$3.7 million lower than the President requested. The bill funds \$14.7 million in increases requested in the budget for land resources, fisheries and wildlife, recreation and facilities maintenance. Congress restored \$6 million of the \$8.5 million requested for resource management planning, rejecting a House proposal to eliminate the program. The act provides \$1 million of the \$4 million requested by the administration for abandoned mine reclamation. BLM's land acquisition program continues to be chipped away, down \$4 million this year. The BLM manages 270 million acres of public land in the West and Alaska while supervising mineral leasing on an additional 300 million acres of public land.



FWS (\$000)

	FY96 Enacted	FY97 Request	FY97 Enacted
Resource Management	505,441	540,372	523,947
Habitat Conservation	53,808	53,808	55,292
Endangered Species	57,047	83,076	67,550
Consultation	15,997	23,997	18,000
Listing	4,000	7,483	5,000
Candidate Cons. Agrmnts (Prelist.)	3,800	5,237	4,800
Recovery	36,500	46,359	39,750
Env. Contaminants	8,821	8,821	8,821
Fisheries	64,698	69,098	66,248
Law Enforcement	35,265	35,265	35,265
Migratory Bird Mgmt.	15,255	15,255	15,252
Refuge O&M	169,237	179,237	178,240
Land Acquisition	40,319	38,290	44,479
Acquisition Mgmt.	8,500	9,700	8,500
Nat'l Wildlife Refuge Fund	10,779	10,779	10,779
N. Amer. Wetlands Cons. Fund	6,750	11,750	9,750
Coop. End. Species Cons. Fund	8,074	16,085	14,085
Construction & Anadromous Fish	<u>37,605</u>	<u>37,587</u>	<u>43,365</u>
Total Agency	645,831	660,715	652,605

The FWS got a \$10 million shot in the arm this FY for its embattled endangered species program. The Clinton administration had sought a total of \$99.2 million for endangered species programs, including a \$22.8 million increase in the resource management account for endangered species program operation and \$6 million for habitat conservation plan grants. The omnibus act includes

\$81.6 million total for endangered species, an increase of \$13.3 million over FY96, but \$17.5 million less than the president requested. The endangered species listing program resumed operation in April after a one-year moratorium imposed by Congress in FY95. The program now faces a backlog of 242 proposed species; 182 candidate species, pending court orders to designate critical habitat for six species; and unresolved petitions to list or delist 57 species. The Clinton Administration requested \$7.5 million for the program and received \$5 million, an increase of \$1 million from FY96. Congress increased slightly funding for the FWS's land-buying account, approving \$4.1 million more than in FY96. Included in the amount is \$3 million to establish a new national wildlife refuge at Clarks River in Kentucky. The agency received \$18 million for consultation programs, which includes the 300 habitat conservation plans established to involve local communities and landowners in endangered species protection efforts. While this is \$2 million more than last year, it fell \$6 million short of the administration's request. The funding will be provided through a direct FWS grant, rather than through the National Fish and Wildlife Foundation as in the past. The FWS manages 92 million acres of public land, including 510 national wildlife refuges and 32 wetland management districts.



FS (\$000)

	FY96 Enacted	FY97 Request	FY97 Enacted
National Forest System	1,282,267	1,292,553	1,274,781
Ecosystem Planning	130,008	145,000	---
Land Management Planning	---	---	130,088
Minerals & Geol. Activities	35,017	35,000	35,787
Landownership Management	57,053	57,000	57,053
Range Management	27,012	31,000	38,012
Recreation Use	211,151	211,000	211,151

Heritage Resources			
13,570	14,000	13,570	
Recreation Mgmt.			
164,314	164,000	164,314	
Wilderness Mgmt.			
33,267	33,000	33,267	
Forestland Vegetation Mgmt.			
51,768	52,000	55,768	
Soil, Water & Air			
42,014	48,000	42,114	
Timber Sales Admin.			
188,641	190,000	196,000	
Wildlife & Fish Habitat			
85,561	91,000	85,811	
Land Acquisition			
39,392	41,200	40,575	
Acquisition Mgmt.			
7,392	7,500	7,500	
Construction			
224,280	169,662	174,974	
Road Construction			
94,942	91,000	93,000	
Trail Construction			
20,009	26,000	22,000	
Forest Research			
178,000	180,000	179,786	
State & Private Forestry			
136,833	164,000	155,461	
Wildland Fire Management			
485,485	495,016	530,016	
Total Agency (discretionary)			
3,157,628	3,152,522	3,166,898	

The FS budget will decrease by 5.6% (-\$188.1 million) for FY97 with most of the cuts coming from construction (-\$49.3 million). Firefighting programs have been consolidated into one wildland fire management account, funded at \$530 million. An additional \$550 million has been set aside in an emergency account to pay for firefighting needs if, as expected, total costs exceed appropriations. The state and private forestry account, which funds programs to help improve management of non-federal forests for timber harvest, disease control and other purposes, got a \$18.6 million boost. Range management also was increased considerably (+ \$11 million). Timber sale administration funds increased \$7.4 million, with which the administration plans a total harvest of 4.18 billion board feet (bbf). Of that, 2,751 bbf is to come from regular green sales, while 1.429 bbf is expected to come from the salvage program. The salvage timber rider, passed last year as part of the FY95 rescissions package, expires December 31, 1996. The FS manages 191

million acres of national forest and grasslands, provides assistance to state and private foresters while carrying out major forest research and working on international forestry issues.



NPS (\$000)

	FY96 Enacted	FY97 Request	FY97 Enacted
Operation of the Park Sys.	1,081,481	1,173,304	1,152,311
Resource Stewardship	171,359	209,410	193,610
Visitor Services	251,555	270,177	270,177
Maintenance	349,280	366,001	367,898
Park Support	221,345	234,324	227,967
Land Acquisition (total)	44,262	34,550	53,915
Park Service Land Acquisition	35,562	26,250	45,215
Acquisition Mgmt.	7,200	6,700	7,200
State LWCF Grants	---	---	---
State Administrative Expense	1,500	1,500	1,500
Construction	145,225	143,225	163,444
Nat'l Rec. & Pres.	37,579	40,218	37,967
Historic Pres. Fund	36,212	38,290	36,212
Urban Park & Rec. Fund	---	---	---
Total Agency	1,313,759	1,611,184	1,414,258

The NPS got a major \$69.8 million hike in FY97 operations funding, and overall funding increased 8%, or nearly \$100 million. In allocating these funds, the committee said it placed a high priority on NPS operations and base programs which reflects the NPS's highest priority initiatives. The increases provided the NPS are higher than any other agency funded in the omnibus bill. A total increase of \$21.3 million is provided for resource stewardship. Included in that amount is \$6.7 million for across-the-board increases, \$2.1 million for park operations, \$2 million for inventory and monitoring, \$8 million for South Florida Ecosystem

Research, and \$2.5 million for cultural resource preservation. Visitor services funds were increased by \$18.6 million, while maintenance spending increased \$19.2 million. The NPS consists of 367 units covering 80 million acres across the country. Congress maintained essentially even funding for recreation and preservation programs. Once again, conferees denied funding for the urban parks and recreation program, which gives money to cities to restore park and recreation areas.

Land and Water Conservation Fund (LWCF) Spending (\$000)

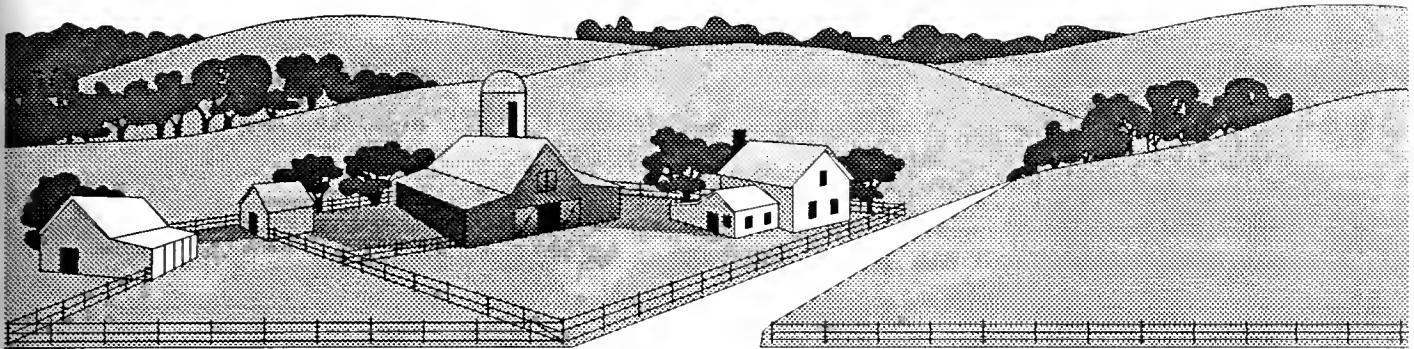
	FY96 Enacted	FY97 Request	FY97 Enacted
BLM	14,100	13,060	10,410
FWS	40,319	38,290	44,479
FS	39,392	42,000	40,575
NPS	44,262	34,550	53,915
State Grants (minus adm. exp.)	---	---	---
Total	138,073	127,900	149,379

Although congressional support of land acquisition is tepid at best, the final agreement boosts LWCF spending by more than \$20 million over the Clinton Administration's request. Acquisition spending remains historically low, the \$149 million amount being nearly 40% less than that provided just two years ago. Although last year Congress refused to stipulate specific projects and required the DOI and FS instead to submit a list of priorities for approval, this year's agreement returns to the tradition of congressionally-directed appropriations. Projects include \$12 million for the Everglades, \$3 million to establish the Clarks River National Wildlife Refuge in KY, \$6 million for the Columbia River Gorge, and \$6 million for the Appalachian Trail.

Source: Land Letter Special Report Vol. 15, No. 28

Constitutional Amendment on the Environment

A coalition of legislators in 37 states on September 25th called on Congress to adopt a constitutional amendment aimed at protecting the environment. Led by Rep. Leon Billings (D/MD) and Rep. Richard Brodsky (D/NY), the National Caucus of Environmental



Legislators hopes to counter what it sees as "anti-environmental trends" in the 104th Congress and recent Supreme Court rulings.

Thirty-four of the 37 legislators are Democrats; three are Republicans. According to Brodsky, "The American people are way ahead of the government; they want their air and water and the natural resources of the nation protected".

As much as 62% of the public supports the "broad concept" of a constitutional amendment to protect the environment, according to a poll conducted by *Greenberg Research*. The survey was conducted for the coalition of legislators asking for support from Congress and presidential candidates for a Clean Environment Constitutional Amendment.

The survey showed support rising to 67% after those polled heard the actual wording of the amendment: "The natural resources of the nation are the heritage of present and future generations. The right of each person to clean and healthful air and water, and to the protection of other natural resources, shall not be infringed by any person." And 58% percent of the 751 likely voters surveyed still favored the amendment "after listening to a series of attacks against it." The poll has a margin of error of +/- 4%.

Defenders of Wildlife Pres. Rodger Schlickeisen, who last year called for such an amendment said, "The Constitution already guarantees to 'our Posterity' legal rights to go along with their moral rights. ... What is necessary is to establish that our Posterity has an equal moral right to benefit from the natural environment

and that [they] should be equally protected by a legal right stated in the Constitution."

The states where the amendment will be offered are: AK, AZ, AL, CA, CO, CT, GA, IL, IN, IA, KS, KY, LA, ME, MD, MA, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, OH, OK, OR, PA, RI, SD, TX, VT, WV, WI and WY. To take effect, the amendment would have to be passed by Congress and ratified by 38 states or ratified by a constitutional convention of the states.

Source: Greenwire Vol. 6, Nos. 104 and 113

Public View On Environmental Issues

A recent *MTV* poll conducted by "Vital Statistics on American Politics" revealed that 82% of adults under 30 feel that proposals for "strong environmental laws" are good for the country.

In another poll released on November 5 by the *Washington Post*, among five topic areas, environmental concerns received the highest amount of support from young adults. Proposals to raise the minimum wage and enact a balanced budget amendment came in at 81%; abortion rights, 59%; and barring Internet pornography, 57%. However, in a separate question, the young adults did not cite environmental issues among their top five concerns, which were crime, education, high taxes, unemployment and welfare reform.

According to an interim report released by the Heinz Family Foundation's *Democracy Project*, some 72% of

voters between 18 and 24 years of age say that having a clean environment is one of their biggest concerns or a major concern. The study found that 58% of young voters prefer candidates who favor strengthening environmental protections, while 27% prefer candidates who aim to reform environmental regulations to reduce burdens on business. Also, 66% say it would be very important to vote if a candidate wanted to significantly weaken environmental protections. The poll, conducted in July by *Lake Research* and *Deardourff/The Media Company*, surveyed 984 voters.

However, according to a poll conducted by the University of Chicago's *National Opinion Research Center* (NORC) during the 1990s, Americans have become less supportive of spending money on the environment. The General Social Survey, an annual fixed-question poll of 2,904 people that the NORC has conducted for the past 24 years, found that between 1989 and 1996, there was an 18% drop in the percentage of Americans who favor greater spending on the environment. Tom Smith, director of the survey, said that the environment was a "strong gainer" in the 1980s, but he attributed the recent decline in support partially to a "reduced perception of environmental crisis," as well as a drop in per-capita income among Americans.

Some 85% of voters do however consider a congressional candidate's stand on the environment to be an important factor in deciding how to cast their vote. This according to a poll released on November 6 by the Washington, DC-based *Environmental Information Center* (EIC). This poll

surveying 788 adults between October 30 and November 3, found that 53% said a congressional candidate's position on environmental protection and clean air and water standards was "very important," 32% said it was "somewhat important," 8% called it "not too important", and 5% said it was "not important at all."

The results showed a "sea change" in opinion from earlier polls conducted by Democratic pollsters Lake Research and *Greenberg Research* that found 58% of voters rating the environment as an important issue in judging candidates in 1995 and only 30% in 1994. The EIC released poll was conducted by *ICR Survey Research* of Media, PA; margin of error was +/- 2.5%

Sources: Greenwire Vol. 6, No. 118, 130 and 133

Gore Calls for Environmental Report Card

Vice President Al Gore on September 25th called for federal agencies to work with scientists and interest groups to issue a report card on the health of the nation's ecosystems by 2001

The report card would assess "key indicators" -- such as wetland and forest preservation, timber productivity, croplands fertility and fisheries recovery and production -- to help policy makers determine whether environmental protection laws are working. Gore said, "We must improve coordination of the 15,000 federal environmental monitoring sites".

Source: Greenwire Vol. 6, No. 107

River Groups Merge

The American River Management Society and the *River Federation* have merged into *The River Management Society* (TRMS). The TRMS is presently electing new national officers. Nominations are being mailed to: Ken Vines, Gold Beach Ranger District, 29279 S. Ellensburg, Box 7, Gold Beach, OR 97444.

River Index

- Number of dams 15 m. or higher on the world's rivers -
 - ▶ as of 1950: 5,270
 - ▶ as of today: approximately 40,000

- Number of dams 15 m. or higher under construction worldwide (1995): 1,118

- Estimated number of dams begun each year, worldwide: 300

- Percent of U.S. freshwater resources considered too contaminated to swim in or drink: 40

- Kilometers of the world's once free-flowing rivers that had been altered for navigation -

- ▶ by 1950: 8,759
- ▶ by 1980: 498,000

- Percent increase in per-capita water use 1900-1980, worldwide average: 200

- Percent increase in water withdrawal from the world's freshwater resources from 1900 to 1980: 566

- Amount of water required to manufacture the average U.S. car: 140,000 liters

- Amount of water used annually by a faucet dripping one drip/second: 3,785 liters.

Source: *World Rivers Review*, September 1996

Meetings of Interest

January 14-16: 1st Annual Conference on Natural Resources of the Missouri River Basin, Columbia, MO. A multi-disciplinary conference is being established to provide a forum for information exchange between researchers and resource managers on issues related to the stewardship, ecology, and management of the Missouri River mainstem, floodplain and tributaries. Contact: Mark Lastrup, USGS-BRD, Midwest Science Center, Route 2, 4200 New Haven Road Columbia, MO 65201, (573) 875-5399 X1703, E-mail: mlastrup@msc.nbs.gov

January 21-22: Ohio River Conference, Cincinnati Convention

Center, Cincinnati, OH. Held in conjunction with the Cincinnati Travel, Sports and Boat Show, the conference focus will be on the importance and status of the Ohio River fishery resource. Contact: Randy Miller, Ohio Division of Wildlife, (614) 265-6554.

January 28-31: Zebra Mussel and Aquatic Nuisance Species Conference, Radisson Hotel, New Orleans, LA. Contact: Elizabeth Muckle-Jeffs, Conference Administrator, 567 Roy Street, Pembroke, ON K8A 6R6 Canada, 1-800-732-3386

February 6-7: 2nd Upper Mississippi River Summit Meeting, Airport-

Marriot, St. Louis, MO. Accomplishments of the five study teams will be reviewed and the Big River Partnership as whole will be evaluated. Contact: Bob Post, U.S. Army Corps of Engineers, (612) 290-5303.

March 8-11: Sixth International Symposium on the Ecology of Fluvial Fishes, Univ. of Lodz, Lodz, Poland. Contact: Tadeusz Penczak, Dept. of Ecology and Vertebrate Zoology, Univ. of Lodz, 12/16 Banacha St., 90-237 Lodz, Poland, 011/048-42-781364.

March 11-13: 53rd Annual Meeting of the Upper Mississippi River Conservation Committee, Riverport

Inn, Winona, MN. Contact: Jon Duyvejonck, UMRCC, 2269-48th Ave. Court, Rock Island, IL 61201

March 14-18: 62nd North American Wildlife and Natural Resources Conference, Omni Shoreham Hotel, Washington, D.C. Contact: Richard McCabe, Wildlife Management Institute, 1101 14th Street, NW, Suite 801, Washington, D.C. 20005, (202) 371-1808, FAX (202) 408-5059.

April 24-25: 29th Annual Meeting of the Mississippi River Research Consortium, Holiday Inn, La Crosse, WI. Contact: Mark Steingraeber, U.S. Fish and Wildlife Service, Fishery Resources Office, 555 Lester Avenue, Onalaska, WI 54650.

May 7-9: Communities Working for Wetlands, Radisson Plaza Hotel, Alexandria, VA. The conference will be a gathering of people interested in community-based wetlands conservation who will share their experiences and thus expand their wetlands knowledge. Contact: Terrene Institute, 4 Herbert Street, Alexandria, VA 22305, (800) 726-4853.

June 3-4: Pathogens and Diseases of Fish in Aquatic Ecosystems: Implications in Fisheries Management, Portland, OR. Contact: Ray Brunson, Olympia Fish Health Center, U.S. Fish and Wildlife Service, 3704 Griffin Lane, Suite 101, Olympia, WA 98501, (360) 753-9046, FAX (360) 753-9403.

June 3-5: Fisheries Management under Uncertainty - International Symposium, Bergen, Norway. Contact: Ann Gro Vea Salvanes, Dept. of Fisheries and Marine Biology, Univ. of Bergen, Bergen, Norway, Anne.Salvanes@ifm.uib.no.

June 29 - July 3: Annual Symposium of the American Water Resources Association and the Universities Council on Water Resources, Keystone Resort, Summit County, CO. Contact: AWRA, 950 Herndon Parkway, Suite 300, Herndon, VA 22070-5531, (703) 904-1228; or UCOWR, 4543 Faner Hall, Mailcode 4526, Southern Illinois University - Carbondale, Carbondale, IL 62901-4526, (618) 536-7571

July: III International Symposium on Sturgeon, ENEL Training Centre, Piacenza, Italy. Contact: Dr. P. Bronzi, ENEL spa - CRAM via Monfalcone, 15-20132 Milan (Italy) phone: + + 39-2-72243412 or 3452,

FAX: + + 39-2-72243496, E-mail: bronzi@ram.enel.it.

August 18-20: Wild Trout VI, "Putting the Native Back in Wild Trout", Montana State Univ., Bozeman, MT. Contact: Robert Gresswell, U.S. Forest Service, Pacific Northwest Research Station, 3200 SW Jefferson Way, Corvallis OR 97456, (541) 750-7410, gresswer@ccmail.orst.edu

August 24-28: 127th Annual Meeting of the American Fisheries Society, Monterey, CA. Contact: Paul Brouha, (302) 897-8617, Ext. 209.

Early November 1997: Ecological Restoration as a Key Element of Regional Conservation Strategies - 9th Annual Society for Ecological Restoration Conference , Ft. Lauderdale, FL. Contact: SER, 1207 Seminole Highway, Suite B, Madison, WI 53711, (608) 262-9547.

May 23-28, 1998: First International Ictalurid Symposium - Catfish 2000, Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180. (573) 751-4115, FAX (573) 526-4047.

Congressional Action Pertinent to the Mississippi River Basin

Fish and Wildlife

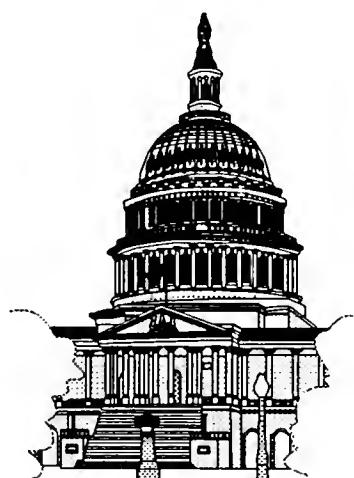
S. 2115 (Shelby, R/AL) and H.R. 4144 (Brewster, D/OK) to protect and enhance sportsmen's opportunities and conservation of wildlife.

Forests

H.R.4087 (Browder, D/AL) designates certain federal lands in Alabama as the Dugger Mountain Wilderness.

H.R.4145 (Bryant, D/TX) amends the Forest and Rangeland Resources Planning Act of 1974 and related laws to strengthen the protection of

native biodiversity and ban clearcutting on federal lands.



Land Use

S. 2185 (Wyden, D/OR) to improve federal environmental policy by providing incentives for state and local growth management plans and land use programs.

Public Lands

S. 1844 (Murkowski, R/AK) to amend the Land and Water Conservation Fund Act to direct a study of the opportunities for enhanced water based recreation and for other purposes. Approved by the Energy Committee in September.

H.R. 3619 (Campbell, R/CA) to

provide off-budget treatment for the
Land and Water Conservation Fund.

H.R. 3752 Young, R/AK a bill to preserve the sovereignty of the United States over public lands and acquired lands owned by the U.S., and to preserve state sovereignty and private property rights in non-federal lands surrounding those public lands and acquired lands.

S. 2089 (Thomas, R/WY) to transfer Bureau of Land Management Lands to the state in which they are located.

S. 2181 (Dorgan, D/ND) to provide more effective management of national grasslands.

Water and Wetlands

H.R. 3217 (LaTourette, R/OH) to

provide for ballast water management to prevent the introduction and spread of nonindigenous species into the waters of the U.S. and for other purposes. Passed and signed into law by President Clinton as the *National Invasive Species Act (NISA)*.

Source: Land Letter

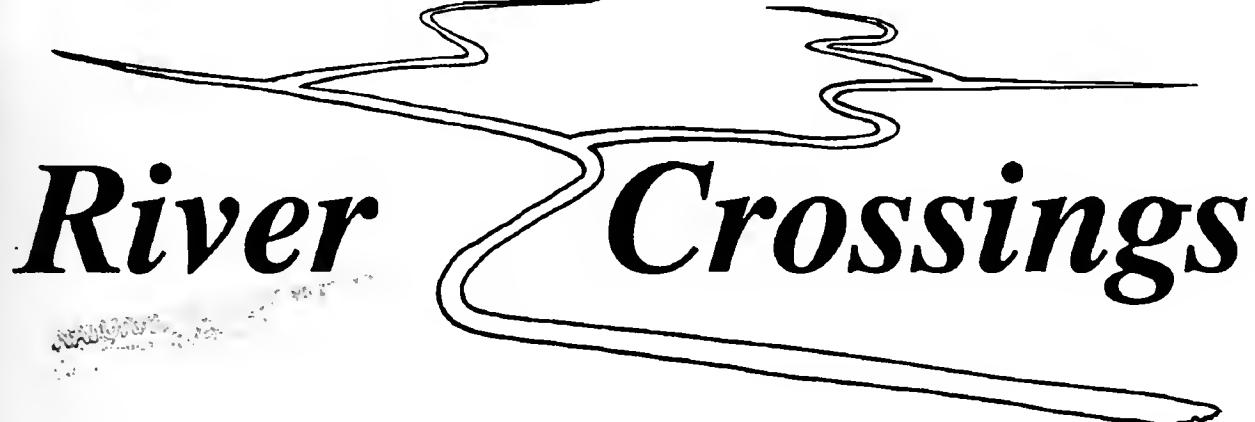


River Crossings

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River Crossings

Volume 6

7
January/February 1998

Number 1

Reader Survey Results

We'd like to thank all of our readers who responded to the Readers Survey included with the November/December issue of *River Crossings*. We received a wide array of helpful comments, ranging from those wishing to see more coverage of national level activities to those wishing to see more coverage of local events.

This is not surprising since our readership covers a broad spectrum, ranging from those located "inside the beltway" in Washington, D.C. who would like to see more information from the hinterlands, to field personnel located in the remote corners of the basin who use *River Crossings* as an important, and in some cases their only, source of information to keep up to date with national events and happenings in Washington.

Some of our readers who have ready access to the electronic media pointed out that a portion of the information published in *River Crossings* is also available on the Internet, while others without access to the Internet appreciated the fact that we provide them access to important information that they don't otherwise have access to. Others praised *River Crossings* as a unique, valuable, and concise summary of information related to river issues covering the past two months, whether it's available elsewhere or not.

Responses were received from all types of readers (i.e. those representing local, state and federal governments to those representing the agriculture, power, and navigation industries). As in the past we will try to use all of our reader's comments to improve our publication. For you electronic buffs, we may even have *River Crossings* on the Internet before long. We also hope to include more articles and information from member states and agencies, as well as from our general readers. So please feel free to send us articles and information as often as you'd like, and we'll make every attempt to use it.

Thanks again for your continued support of *River Crossings* and for your continued interest in improving the management and conservation of our Nation's rivers and their aquatic resources!

First Annual Missouri River Conference

The first annual Missouri River conference "Missouri River Past, Present, & Future" was held on January 14-16 at the University of Missouri Alumni Center in Columbia, MO. It was sponsored by the Missouri River Natural Resources Committee, the Missouri River Basin Association (MRBA), the Midwest Science Center of the USGS/Biological Resources Division, the Missouri Department of Conservation, and the Missouri Chapter of the American Fisheries Society. The conference was a great success with more than 200 persons in attendance.

A major conference attraction was a panel discussion on Missouri River issues. Moderated by Richard Opper,

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Executive Director of the MRBA, the discussion included panelists representing Power, Municipal, Agricultural, Navigation, Recreation, and Environmental interests.

Spokespersons for the power industry and municipal utilities interests simply expressed their needs for reliable sources of water and a willingness to cooperate with other interests in order to satisfy the "common good". The hydropower spokesperson even expressed the willingness of his industry to share some of the expenses of fish and wildlife habitat mitigation and protection.

The spokesperson for agricultural interests (Missouri Farm Bureau) spoke of his industry's responsibility to feed the world's growing population, and a concern for the growing encroachment of development onto prime farmland. These concerns he said, justify farming the entire floodplain. His call was for the government to serve the needs of the private sector, and to sponsor the construction of 500 year levees all along the lower Missouri River.

The spokesperson for the navigation industry spoke of the failure of the Missouri River navigation project to reach its full potential (17.5 million tons annually). He went on to state that the current tonnage (1.5 million tons and decreasing) was caused by a lack of public investment in the river's navigation infrastructure. He essentially said that (as in Kevin Costner's movie "Field of Dreams"): "If we spend it (i.e. enough public money to support navigation facilities), they will come".

The spokesperson for recreation and the recreation industry spoke of the failure of upstream reservoirs to support projected recreation potential. He described tremendous losses to marina operators on Ft. Peck Reservoir (MT) during the drought period of the late 1980's, and entered a plea for support in keeping reservoir water levels stable during summer recreation seasons.

The spokesperson for environmental interests (Environmental Defense Fund) described the failure of

navigation to meet its potential, and the fallacy of continuing to place navigation as a top priority for the project, even calling for termination of commercial navigation on the Missouri River and restoration of more natural floodplain ecosystems to serve environmental and recreational needs. He argued that if the river is allowed to reach its recreational potential, the benefits received to local communities would far outweigh those being provided by navigation. He presented the following proposal as an approach to satisfying the major needs of most Missouri River interests:

Main stem reservoir water levels could be held at desired elevations during summer recreation seasons by eliminating commercial navigation on the lower Missouri River. Enough water should be released from the reservoirs, however, to serve the needs of hydropower and municipal and industrial interests – even during periods of drought. This would provide more flexibility for use of any

excess water by hydropower interests, while reserving significant water in the reservoirs to ensure that the fall season needs of Mississippi River navigation are met. During the fall harvest season, Mississippi River water elevations often fall to levels below which maintenance of commercial navigation is threatened, and requires significant dredging at great public and environmental cost. Reserving Missouri River water for fall release would also benefit the agricultural industry by helping to ensure that grain shippers have reliable access to foreign markets. Floodplain lands within the lower Missouri River's historic channels, or meander belt (i.e. floodplain lands having the lowest vertical elevation), would be acquired from willing sellers to satisfy the environmental needs of endangered species and fish and wildlife. Acquisition of these lands for "open space" would provide a measure of local flood protection and enhance the lower river's recreational potential. The latter would serve the needs of

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
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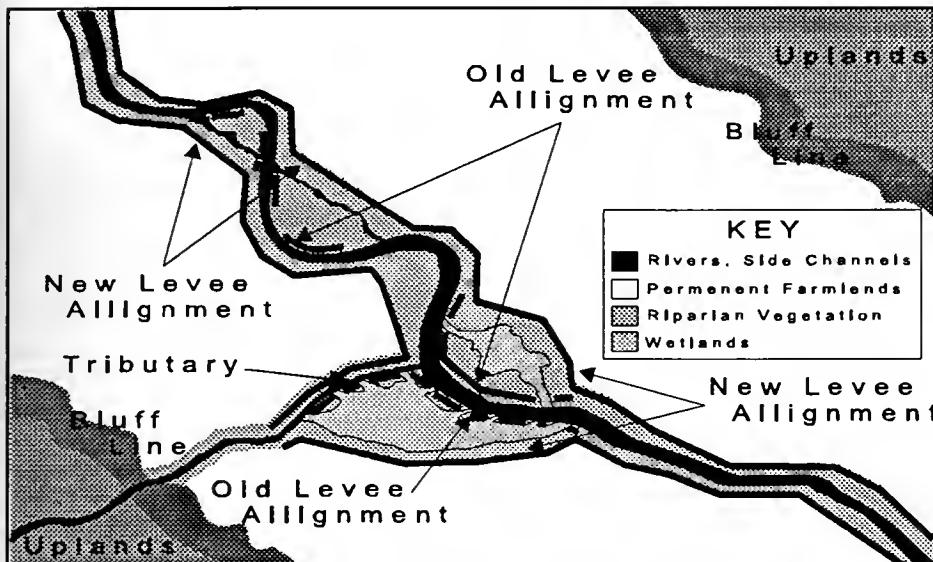
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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any



A hypothetical river reach employing "setback" levees to restore a series of habitats. These would function as "habitat beads" or "ecological patches" in a "string of such beads", distributed along an entire river. They would serve to restore ecological integrity, while providing for flood water storage and conveyance, as well as restoration of water quality. Located across an entire basin, such "habitat beads" could go a long way toward reducing flooding and runoff of polluted waters.

local communities by restoring their historic river character, reducing the risk of floods, and attracting recreation related investments. Fair market value, established by local real estate markets, would be paid for floodplain lands. Local, state, and federal units of government who acquired title to floodplain lands would cooperate with neighboring land owners, ensuring that agricultural and municipal flood protection is maintained. Investments would be kept to a minimum on "open space" public lands by allowing them to revert to a more natural character, with minimal structural improvements. Farmlands located adjacent to public lands would enjoy the enhanced flood protection provided by the "open space" of neighboring public lands because these public lands would be allowed to flood first during high water events. Farmlands located outside of the meander belt would not only enjoy the benefits naturally provided by their higher elevation, but would also find their flood protection enhanced by the open space of public lands distributed at various locations along the entire river. Farmlands located away from the river could also improve their existing levee system by participating in the set back levee program originally authorized by the Pick Sloan Plan of the 1940's."

Discussions (including audience participation) which followed produced little common ground, but did reveal the positions of the various interests and their willingness, or lack of willingness, to compromise.

Not surprisingly navigation interests were not interested in giving up the river's commercial navigation project. One argument even went so far as to justify maintaining it on the grounds of its role in "reducing air pollution" (i.e. by keeping trucks off the roads). That argument was countered by the environmental spokesperson's argument that, "How could air pollution be reduced when there is essentially no barges using the river?" He facetiously stated said that if barges are there they must either be "stealth barges" or "barges that move only at night", because you rarely, if ever, see one.

Agriculture interests reiterated their call for 500 year agricultural levees, saying that their need was just as great as that of cities and urban areas. They also justified their entitlement to disaster assistance for flooding as long as similar assistance is given to victims of hurricanes, wildfires, etc. They were not opposed to restoring some of the "old river channel" or meander belt for "open space" or

wildlife habitats as long as it wasn't done in areas where those in attendance were attempting to farm. Support was also expressed for the "habitat bead" concept as a common sense approach to habitat restoration and flood control.

The "habitat bead" concept was proposed by biologists as a result of formal and informal discussions held at a 1994 international symposium on floodplain rivers in La Crosse, WI. The concept has been promoted for about two years by environmental interests on the lower Missouri River (see figure to the left).

In summary, while nothing was really resolved by the conference, it did a great service in getting people with vastly different interests and views of the world together to discuss some very difficult river management issues. Continued dialog of this nature can only help, and since the entire panel and discussion session which followed was recorded on videotape, it would seem beneficial for this tape to be distributed to the various public television stations across the basin in order to further public discussions and understanding of Missouri River issues.

Our hats go off to the session sponsors, and we look forward to next year's conference, tentatively scheduled for a similar date in Omaha, NE.

Mo River Water Management Recommendations

The Missouri River Basin Association's (MRBA's) board of directors has compiled a list of recommendations for improving water management in the Missouri River Basin. Ultimately, these recommendations will be presented to the U.S. Army Corps of Engineers (COE), probably next spring, after the MRBA consults with interest groups in the basin. Final MRBA recommendations will carry significant weight, because the list will reflect the views of people who live in the basin.

For about seven years, the COE has been working on a revision of its

Master Manual, the overall Missouri River operating plan, but many of the COE's proposed changes have not been well received. In 1995, the COE invited the MRBA, as an organization representing the basin states and Indian tribes, to compile a list of recommendations to help the federal government manage the river more equitably.

The recommendations which follow are intended to promote stability and growth in eight major areas: water supply, navigation, hydropower, fish and wildlife habitat, bank and shoreline integrity, flood control, recreation, and monitoring the river system:

Water Supply - Those who use Missouri River water for municipal, industrial and agricultural purposes need sufficient water flows at intake structures to maintain water quantity and quality. Reservoir levels are key to maintaining access for many users in the upper basin. Adequate supplies of treated water for both rural and urban uses are a priority throughout the basin. **Water Supply Goal:** Throughout the basin, promote measures that ensure the quantity, quality, reliability, and growth of the water supply for municipal, rural, industrial, and irrigation-agricultural uses; and for cooling electric power generators.

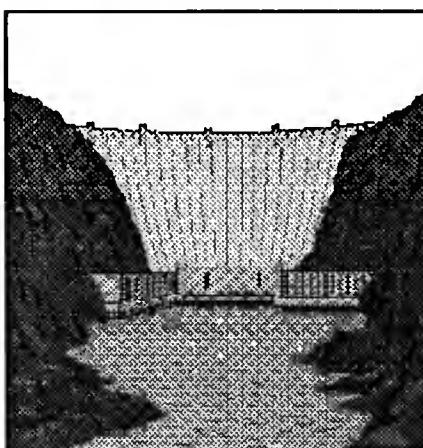
- Establish policies in the Master Manual to ensure adequate flows during winter and drought and to minimize the adverse effects of siltation.
- Where structural limitations restrict the ability to withdraw water from the river or a reservoir during flood or drought, support assistance to local or tribal governments to make needed improvements.
- Ensure that water supply systems continue to operate during floods.
- Initiate discussions on policies regarding water quality discharge permits.
- Encourage the development of regional water supply systems.
- Continue ongoing discussions of future depletions among states and tribes.

Navigation - The drought of the late 1980s and early 1990s severely affected Missouri River navigation, an industry of great importance to the

lower basin. It had an adverse impact on the two things that affect tonnage shipped on the lower river: the cost of service and the reliability of that service. At times, flows from the Missouri River are critical to navigation on the Mississippi River. **Navigation Goal:** Promote the stability, reliability and growth of navigation on the Missouri River system through water management, economic assistance and transportation planning.

- Prepare a proposal for:
 - Improving the overall efficiency of tow boats and barges operating on the Missouri and Mississippi rivers.
 - Implementing structural, operational and maintenance measures, along with modifications to port facilities, which would improve support to navigation.
- Research the feasibility of:
 - Operating the Missouri River to support flows on the Mississippi River at critical times.
 - Releasing water in a precise, predictable manner during the onset of drought.
- When there is enough water, maintain a 9-foot channel which would provide predictable conditions, including an early spring opening, a full-length season, and no mid-year corrections
- In low water conditions, determine whether to shorten the navigation season or reduce the service levels.
- Improve drought prediction capabilities.

Hydropower - Much of the basin benefits from low-cost hydropower. Hydropower must continue to be a basin priority as long as its production is economically feasible and consistent with other mandates. **Hydropower Goal:** Maintain or enhance the value and reliability of hydropower



production at the lowest possible cost while balancing the need for 1) equitable distribution of power among tribes and states, and 2) consideration of all authorized project purposes.

- When consistent with other project purposes, conserve the water head to avoid depleting pools and to ensure peaking capacity.
- When consistent with other project purposes, store all the water possible under high water conditions.
- Encourage power users to conserve energy.
- Sort out the revenue financing issues associated with hydropower.
- Determine how depletions affect the system's hydropower benefits.
- Encourage improvements to turbines, which would increase their efficiency.

Habitat - The Missouri River is highly modified and controlled. It no longer functions as a natural river in terms of providing and maintaining high quality habitat for many native species of fish and wildlife. Some of these human-made changes are permanent (e.g., mainstem dams and reservoirs), and the intensive development of the river and its floodplain prevents the use of restoration methods that have worked elsewhere. Nevertheless, recovery of threatened and endangered species on the Missouri River, and preventing the further decline of other native river species, depends on restoring natural large river habitats. Support has been expressed for various measures to improve the river system's ability to support native fish and wildlife, but the proposed return of unmanaged and unpredictable high spring flows was not well received. Habitat restoration along the mainstem could be accepted if those who do it are sensitive to the economic value and restoration potential of the project sites, and if landowners are compensated.

Habitat Goal: Enhance habitat systemize by supporting programs that focus on species maintenance and recovery. These programs should modify the physical structures along the river, restore the river channel and floodplain habitats, and improve water quality.

- Create and restore habitat in specific areas to support native fish and wildlife.
- Identify and pursue off-channel

opportunities to create and improve habitat for the least tern and piping plover.

- Assess the economic viability and habitat restoration potential of lands along the river.
- Enhance habitat in selected tributary sites, and study the feasibility of a fish passage at Gavins Point Dam.



- Ensure adequate flows to meet the minimum needs of threatened and endangered species.
- Consider temperature and water quality benefits from multi-level releases from dams.
- Purchase habitat only from willing sellers.
- Promote a substantial increase in funds for creating, restoring and enhancing habitat within the system.

Bank & Shoreline Integrity

Throughout the basin, unprotected shorelines erode in part because of the operation of the system to meet various demands placed upon it.

Erosion and sedimentation have affected all river uses. **Bank & Shoreline Integrity Goal:** Throughout the system, maintain the integrity of certain riverbanks and lake shorelines to protect and enhance current and future uses.

- Establish a priority list of riverbank reaches most in need of stabilizing.
- When there's excess water in the reservoirs to evacuate, identify operational and structural measures to support higher winter flows while reducing the damage that ice dams and ice formation cause to Corps' structures.

- Identify areas where acquiring sloughing easements or land from willing sellers would be appropriate, and seek funding to acquire them.
- Combine habitat creation activities with efforts to protect streambanks and to prevent floodway sediment buildup.
- Encourage local shoreline control.
- Support levee maintenance and repair where appropriate.
- Protect cultural resources from erosion damage.
- Study delta formation in the headwaters of the reservoirs and develop some recommendations to address the problems.

Flood Control - Improving flood control is truly a basinwide goal. All members agree that spring discharges from all projects should be carefully managed to limit the potential for flooding to the greatest possible extent. Below the confluence with the Platte River, and throughout much of the basin, higher flows cause higher groundwater, which prevents adequate drainage of prime farmland. This "invisible flood" can prevent crop plantings or, in the best-case scenario, reduce crop yields if a late crop can be planted at all.

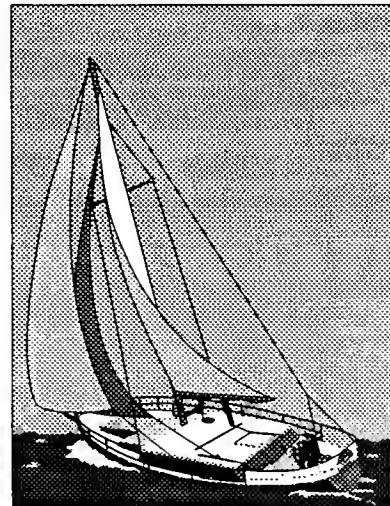
Flood Control Goal: Maintain the high priority of flood control within the basin, and reduce the damage caused by future floods.

- Discourage development in the Missouri River floodplain.
- Enlarge the floodway by acquiring selected flood-prone properties from willing sellers. This will allow the landowner to redirect farming operations and resources. The land can then be used to store excess water, to provide habitat and recreation areas, and to connect the river to the floodplain.
- Appraise flood-damaged properties for their natural resource or flood control values, and for their value as flood-damaged agricultural lands, and then pay willing sellers the greater amount.
- Design new critical facilities and modify those which already exist so they're capable of operating even during a flood.
- Improve road and bridge design to minimize flood damages.
- Make levee repairs promptly where repairs are appropriate to protect public safety or are otherwise justified.

- Expend available funds to repair levees and evacuate flood-prone properties where appropriate.

Recreation - Recreation is of great importance to everyone in the basin. In the upper basin, tourism and recreational use of the reservoirs have become a large part of the economy. In the lower basin, recreational opportunities are limited now, but the area has a large population, and recreation could be developed into an important contribution to their economy. **Recreation Goal:** Promote the stability and growth of recreational use of the river and reservoirs through water management, economic assistance, and recreational planning.

- Develop and implement a basinwide recreation plan that considers both on-and off-channel recreation opportunities, the effects low water would have on recreation, and existing assessments such as the corridor studies done in NE and IA.



- Evaluate existing reservoir recreational facilities. Determine which need improved access, and whether relocation or structural modifications would be feasible to reduce the impacts of fluctuating reservoir levels.
- Seek revenues to finance modifications listed above and/or to compensate for losses the recreation industry suffers during drought.
- Assess how poor or declining water quality affects recreation and devise strategies to mitigate the problem.
- Design new recreation facilities to withstand both high and low water.

- Research the feasibility of:
 - More stable and higher permanent pools.
 - Releasing water in a more conservative manner during drought.
- Evaluate the potential benefits of additional fish hatcheries in the mainstem reservoirs.
- Assess how fluctuating reservoir levels affect fisheries and recreation.

Monitoring - To make informed decisions about how the system will operate under a revised Master Manual, water managers need data that accurately characterizes the existing physical and biological conditions of the river system. It's particularly important to measure the effects of 1) efforts to restore fish and wildlife habitat, and 2) operational modifications to benefit endangered species. Monitoring activities must be focused to provide specific information that experts say is essential. To avoid duplication and minimize costs, any monitoring effort must recognize and incorporate existing data collection efforts. **Monitoring Goal:** Develop a monitoring program to characterize the existing system and to quantify how changes are affecting the system.

- Develop a monitoring program and ask Congress to approve its implementation.

Other Suggestions -

- MRBA should study options for creating a new basin authority with greater responsibility than the association already has.
- MRBA needs to investigate various funding mechanisms to support its recommendations.
- Develop a prior notification process for proposed water use projects.
- Develop an interactive computer program to use as an educational tool for water decision makers and the general public.

Source: The Missouri River Report, December 1996, Missouri River Basin Association, P.O. Box 301, Lewistown, MT 59457-0301

National Recreational Fisheries Initiative

President Clinton established Executive Order No. 12962 for

Recreational Fisheries in June 1995. This Order called upon Federal agencies to collaborate on a national approach to enhance recreational fishery resources nationwide. The President established a National Recreational Fishery Coordination Council comprised of six Federal department representatives and the administrator of the USEPA to oversee development of a National Recreational Fishery Resources Conservation Plan (Conservation Plan). This Conservation Plan was completed in June 1996, with agency-specific strategies to be completed by December 31, 1996. The Sport Fishing and Boating Partnership Council (Partnership Council), a federally chartered advisory group for the Secretary of the Interior, was charged with annually monitoring the status of the nation's fishery resources and evaluating agency efforts to implement the Conservation Plan.

The Partnership Council acknowledges the commitment of the President and the Federal agencies to enhance recreational fishery resources through Executive Order 12962 and the Conservation Plan, but recommends a more comprehensive approach. The Conservation Plan represents the Federal component to this comprehensive approach, but it does not clearly define the role of other stakeholders. In October, 1995, the Partnership Council convened more than 100 recreational fisheries stakeholders in Phoenix, AZ, to identify significant complementary actions needing to be accomplished. Habitat and education were clearly identified as the key elements that stakeholders believe can move the recreational fisheries community toward its goal of enhancing fishery resources. Access to the resource is important but to a lesser degree than the former two. Partnerships are viewed as a means to implement the three strategies. The following top priority approaches to restoring recreational fishery resources nationwide were identified as were the recommended lead entities responsible for each:

Habitat - Cooperation among resource managers and landowners is critical for changing aquatic habitats across

the Nation's landscape. Better communication is needed between resource managers, landowners, and stakeholders. Resource managers are able to provide technical expertise, while landowners and other resource users provide practical and local experience and a private land-base. However, cooperation is only the process for accomplishing the goal of habitat restoration on public and private lands. The goal will only be met when land stewards realize benefits from their actions. Benefits could include increased profits through lowered operation and maintenance expenses or increased yield, reduced property taxes, less restrictive regulations for federally listed species recovery, and financial or technical assistance. To this end, all resource stakeholders must collaborate to accomplish specific objectives that will make resource stewardship more profitable or less costly for individual



landowners and for public or tribal land management agencies. Federal and State laws must be enacted that support and promote this collaborative process.

A. The Industry and Conservation groups should work to amend the Clean Water Act in order to accomplish the following:

- Establish watershed councils to develop watershed management strategies...that include minimum standards for fish habitat quantity and quality, water quantity and quality, and methods for achieving those minimum standards. Success of watershed councils would be

determined through systematic monitoring of habitat parameters.

- Create a national monitoring and reporting system for watershed health that incorporates fish habitat quality and quantity parameters.
- Establish challenge grant programs that assist watershed councils in accomplishing their objectives in partnership with private landowners. Allow state agency contributions of technical assistance on private lands to be credited as a non-Federal challenge match toward projects.
- Provide funds to ensure local success, provide guidelines and technical assistance, and engage local stakeholders.
- Establish methods of transferring payments from beneficiaries to landowners.
- Simplify the application process for private land restoration grants.
- Use nonpoint grant funding [Section 319(h)] to establish and maintain recreational fisheries in urban areas.
- Give equal priority and incentives for restoration/protection of urban watersheds as given rural watersheds under the Farm Bill.

B. The States and Conservation Groups should work to establish and enforce Federal and/or State laws to protect aquatic habitats as follows:

- Establish base flow requirements for rivers and streams.
- Revise state water laws to allow water to remain in the stream for fish habitat.
- Purchase water rights in key watersheds to maintain minimum flows.
- Implement existing provisions in the 1995 Farm Bill for aquatic/riparian habitat restoration.
- Abate point and non-point pollution.

Education and Outreach - Public educators must instill a conservation ethic nationwide, but must educate people at local levels. In addition to using traditional conservation curricula in public schools, educators must address Federal, state, and local legislators to make them aware of the economic importance of fishing and healthy aquatic systems.

Socioeconomic benefits from fishing and healthy aquatic resources needs to be acknowledged and made known at State and Federal legislative and policy levels of government. Changing demographics require that resource

agencies and industry remain in tune with changing needs of anglers.

Outreach by these agencies is needed to remain in contact with and to mentor new or potential anglers. A phased approach should be implemented by state resource agencies and their non-Federal partners to accomplish the following:
Phase I: The States and the Industry should develop an outreach strategy - A model education and outreach strategy must focus on changing demographics, primarily the population shift toward urban areas and the need to touch this population core. Rural anglers, however, must not be overlooked. This strategy must deliver pertinent information to anglers, legislators, and policy makers. The following actions are recommended:

- Hire professional expertise to create a model outreach strategy that defines the anglers and addresses anglers' changing needs.
- Survey current and prospective anglers.
- Compile socioeconomic data that demonstrates the economic and social value of healthy aquatic systems and productive fisheries.
- Do state by state socioeconomic analyses of fisheries resources that provide maximum net public benefits (compare economic value of commercial harvest versus sport harvest).
- Compile information on cost of environmental cleanup, compare with cost-savings of keeping aquatic systems healthy and productive.
- Compile information on cost of nonindigenous species eradication versus the costs of preventing new introductions.

Phase II: The States and the Industry should implement the outreach strategy and include existing education curricula. The following actions are recommended:

- Implement urban fisheries education and outreach programs in cooperation with state and municipal organizations, youth organizations, and national angling groups. Use existing organizations and aquatic education curricula programs currently used by states.
- Establish aquatic fishing education centers in metropolitan centers using existing criteria and teaching aids.
- Set up Fishing Tackle Loaner Programs in metropolitan centers,

expanding on the existing program established by the Sport Fishing Promotion Council in select cities.

- Address women and ethnic groups through existing programs such as "Becoming an Outdoor Woman."
- Equip local school systems with environmental classroom teaching aids such as aquaria and stream modeling tables.
- Empower grass-roots organizations such as watershed councils with the proper outreach and marketing tools.
- Fund local jurisdictions adequately to refine and implement the model strategy.
- Provide cost/benefit information of recreational fishing to Federal and State legislators, local governments, tourism boards, and resource agencies.

Phase III: The States should train resource managers to appreciate, understand, and utilize professionally developed outreach and education strategies. The following actions should be taken:

- Develop graduate-level, continuing education course curricula at public universities that equip public agency employees with the knowledge to implement marketing strategies.
- Establish resource marketing curricula at the U.S. Fish and Wildlife Service's National Education and Training Center in WV.

Phase IV: The States should conduct periodic reviews and evaluations of the effectiveness of national education programs through existing survey data or independently conducted surveys.

Access and Opportunity - Recreational fishing opportunities are affected by proximity to, or availability of, fishable waters, sufficient facilities, and possession of angling equipment. Urban fisheries have great potential because most urban centers are located near fishable waters, have existing local youth and senior mentoring organizations, and have



agency staff capable of organizing recreational fishery programs. Rural areas and private waters offer additional opportunities. Access to all of these potential fisheries could be improved by state-level initiatives that would address various access needs. Initiatives would be developed and championed by local organizations, angling and conservation groups, and state agencies.

A. The States should development partnerships with private landowners to meet the demands for access. The following actions should be taken:

- Provide state tax incentives for private landowners/operators to make operating and maintaining access facilities (including private waters) more profitable.
- Provide resource management assistance by resource agencies to private lake owners or tribes in exchange for public access to private or tribal waters.
- Establish cost-share programs for developing private sites.
- Identify urban fisheries access needs with local municipalities.
- Set up additional point-of-sale fishing permit distribution in states.
- Incorporate public transportation agencies into angler access planning.
- Alleviate private landowner liability for allowing access to ponds.

B. The Industry and Conservation Groups should work to establish state and federal legislation necessary to supply funding or services for access.

The following actions are needed:

- Seek state legislation to create a state marine fuel tax program to supply funding.
- Seek continued support for motor boat access through Federal Aid in Sport Fish Restoration (Wallop/Breaux) Program reauthorization.
- Establish a lands acquisition program at state levels to purchase access sites.
- Set aside some portion of tax revenues to enhance access to urban fisheries.

In summary, the Partnership Council stresses that non-Federal stakeholders must commit to implementing these strategies to ensure that the goal for enhancing recreational fisheries nationwide is met. The Partnership Council also recognizes that assistance from other stakeholders, including Federal agencies, will be

needed. They point out however that partnerships and cooperation are not the end, nor are they substitutes for good leadership. Resource managers, industry, landowners, and conservation groups must fulfill their respective roles by implementing existing laws and championing new approaches that meet the needs described above. Leadership from every facet, from every stakeholder perspective is necessary to restore this Nation's recreational fishery resources.

Contact: Doug Alcorn, Coordinator, Sport Fishing & Boating Partnership Council, (703) 836-1392, FAX (703) 836-1206.

Fish Hatcheries Caught Between Wisdom and Politics

The following is taken from an article by Tom Kenworthy, Washington Post, 12/1/96:

"...to growing numbers of biologists and conservationists..." catchable" trout production that goes on...at hundreds of...federal and private hatcheries is an anachronism that frequently does more harm than good. Excessive reliance on hatcheries, many researchers have found, often leads to a loss of genetic diversity and the spread of disease. Ultimately, they say, it can cause an overall reduction in the fish population as hatchery-raised stocks initially out-compete their wild cousins but, later succumb to conditions that their coddled upbringing makes them unfit to survive.

'As the evidence piles up, fisheries managers throughout the West are being torn between science and politics, most notably the demands of their recreational fishing constituencies. What's more, their budgets rely on angler license fees and taxes generated by hatchery-fed fisheries.

'Colorado's wildlife bureaucracy shows little sign of kicking its addiction to hatcheries, even though fish-production facilities have played a central role in spreading whirling disease, a stubbornly persistent, parasite-borne ailment that has infected nearly 700 miles of the state's trout streams...in Washington state, the new director of the state's fish and wildlife department has learned a painful lesson about the industry's power in the nation's most hatchery-dependent state. Bernard Shanks came into office determined to reassess Washington's reliance on hatcheries but ran into a buzz saw of opposition in the legislature...in Washington, D.C., the Clinton administration encountered stiff resistance from Congress when it sought to modestly reduce its role by turning over a handful of federal hatcheries to the states.

'In a comprehensive study of the plight of Pacific Northwest salmon published last winter, the National Academy of Sciences concluded that in many cases hatchery fish were contributing to the relentless decline of the region's deeply troubled wild salmon stocks. "It is clear that hatcheries have caused biological and social problems," the report said.

'Two years earlier, in a review of federal efforts, the Conservation Fund recommended a major shift from producing fish for recreation toward protecting fish habitat and declining species. "The majority of the panel felt that the provision of hatchery fish for recreational fishing is not a federal responsibility," said the report, funded by the National Fish and Wildlife Foundation.

'But such studies are bucking many decades of government practice, dating from 1871 when the federal government built its first hatchery at Bucksport, Maine, in an effort to



replenish declining stocks of Atlantic salmon.

"The mitigation narcosis" is the term used by Charles F. Gauvin, president of the conservation group Trout Unlimited, to describe the notion that building more and more hatcheries can make up for the ecological damage caused by dams, timber cutting, industrial pollution and other man-made insults to fish habitat.

'Yet with the prominent exception of Montana -- which stopped stocking its streams and rivers in the 1970s -- most western states remain heavily dependent on what Colorado State University professor Bob Behnke calls the "religious cult" of hatcheries.

'None more so than Washington state, which operates 90 hatcheries and devotes a quarter of its fish and wildlife staff to producing fish in man-made tanks...But despite the annual hatchery production of almost 300 million salmon and steelhead (an ocean-going rainbow trout), the runs of chinook, coho and sockeye salmon in the Columbia River system continue to decline. Much of that decline is due to dams and the degradation of spawning habitat, but scientists believe hatcheries also play a significant role.

"Artificial propagation poses a substantial, and perhaps major, threat to the long-term viability of our salmon heritage," wrote Ray Hilborn, a University of Washington professor, in the journal of the American Fisheries Society. "Most evidence suggests that while hatcheries may work initially, their success decreases after a few years."

'Why? Because hatchery fish and wild fish are fundamentally different creatures. Walk along a raceway...and watch how the thousands of young fish react as you cast a shadow across the water. Unlike wild fish, which would scatter to hiding places at the approach of a human, or a predator, these hatchery-bred fish rush to greet the interloper, sure that the shadow means a feeding of fish pellets.

'Natural selection in a hatchery rewards such behavior, unlike in the wild, where stealth and wariness mean survival. Dumped into a stream,

hatchery fish also disrupt the natural order of things. Wild fish tend to stay in feeding stations behind rocks and in deep pools, making sure they don't consume more energy in feeding than they receive from aquatic insects floating down the current. Hatchery fish, by contrast, race about in search of food, wasting valuable energy and displacing wild fish from their feeding stations.

"There is increasing evidence that artificial production produces fish that are not as fit to survive in the natural environment," said Rick Applegate, the West Coast conservation director of Trout Unlimited. "At the same time, hatchery fish can interact with wild fish and through competition and interbreeding can undermine the resilience of wild fish populations."

'Hatcheries also can greatly accelerate the spread of disease. Whirling disease, first discovered in Colorado in 1987, is now found in many of the state's premier trout river drainages, and about half of the state's hatcheries test positive for the disease.

'Though Colorado officials have cut back their stocking rates to prevent the disease from spreading further, they have proposed no fundamental changes in their reliance on hatcheries. Fish reared in hatcheries, said state aquatic wildlife manager Eddie Kochman, provide "the bulk of our recreational fishing."

'Given the extent to which man has polluted fish habitat in the West, national sportfishing advocates say there is no alternative to widespread stocking. "Where wild stocks can be sustained, we totally support that," said Mike Hayden, president of the American Sportfishing Association. "But in many cases man has altered the environment so drastically that native stocks no longer can be self-sustaining."

'Conservationists, while acknowledging that hatcheries will continue to play at least some role in fish management, insist that change is long overdue. "Hatchery reform," said Applegate, "is the issue of the '90s in fisheries management."

Paddlefish Boots and Caviar

A December 29th article in the Bismark Tribune reported on a Williston, MT businessman and bootmaker who has discovered a new source of leather — paddlefish!

Glen Stoner, owner of Western Boot & Leather, is turning paddlefish skins into wallets, checkbook covers and boots. The idea actually came from Nancy Bakewell, president of the Williston Area Chamber of Commerce, which runs the nonprofit Gold Star Caviar company.

Gold Star gets its product from Missouri River paddlefish caught near Williston. With Bakewell's help, Stoner got approval from the ND Game and Fish Department to create a new type of leather from paddlefish skin. Of the 900 paddlefish brought into Gold Star Caviar this year, Stoner took 55 hides.



"paddlefish"

"What I'm getting here are the females. They're the biggest. The males are not really big enough," Stoner said. He picked up the raw skins in June and got going in September. Stoner scrapes the raw skin, then tans it with his own chemical recipe, dries it, breaks it in, and sands it. He has made 30 billfolds so far, and sold all but one. Now he's starting on his first pair of boots.

Stoner has worked with ostrich, bull frog, camel and kangaroo skins. He says leather can be made from any skin that can be tanned. Once it's tanned, it's leather. "I could take walleye and once I tan it, it's leather", he said.

In the meantime, one of our readers on the West coast noted another use for paddlefish — "Montana Paddlefish Caviar" in the Seabear Specialty Foods catalog. Seabear is headquartered at 605 30th St., P.O. Box 591, Anacortes, WA 98221. The add reads as follows:

"Yellowstone River Caviar is harvested from paddlefish in the Yellowstone River in Montana. Mild and fresh, it possesses a true caviar essence, and is very similar in appearance to the legendary Russian Sevruga caviar. Its subtle flavor will please the palates of connoisseurs and beginners alike. M1004A 4 oz. jar \$89.95."

That ought to make the demand for paddlefish go up!

ESA Issues

Two-thirds of the plants and animals protected by the Endangered Species Act (ESA) are either still in decline or their status was unknown, according to a study released on December 5 by the Environmental Defense Fund (EDF). The study, which said that fewer than one in 10 protected species is growing in number, found that protected species are in "particular peril on private land," where 27% are "losing ground." The status of half of the species on private land was not known because of restricted access.

The EDF made several suggestions for making the ESA more effective on private land, including

- more incentives to reward good stewardship,
- earlier action to protect declining species,
- better guidance for landowners on how to protect endangered species, and
- a "scientifically-sound approach for protecting ecosystems and assemblages of species within the overall framework of the act".

A related article recently published in *SCIENCE*, says that populations of most endangered species live in a "relatively few critical 'hot spots' covering a surprisingly minuscule portion" of the U.S. The study -- the first county-by-county analysis of the species' distribution -- found that hot spots are most concentrated in HI, CA and the Southeast, especially FL. Working from government data, scientists from Princeton University and the EDF found that endangered species are typically confined to a small range and are being disturbed by human activities such as urban

development and agriculture.

The study determined that 13 counties, accounting for 1.33% of the U.S.'s total area, had populations of more than half of its endangered plant species:

- "More than half" of all populations of endangered mollusk species were found in only 6 counties;
- for arthropods, 9 counties;
- for fish, 14 counties;
- for birds, 4 counties; and
- for mammals, 7 counties.

"In no case did the counties account for more than 2% of the nation's total area." Further, some 48% of individual plant species were restricted to a single county. The researchers found that generally "the territory of the endangered species did not overlap.

Conservationists have long believed that by protecting birds, for example, they would be protecting other kinds of organisms, too." Although the study found endangered birds and arthropods do indicate the presence of other species, "groups in general overlap 'only weakly.'" The "major exceptions" were Santa Cruz and San Diego counties in CA, which were both particularly rich in endangered species.

EDF's David Wilcove, a study co-author, said regarding the findings, "That's the formula for extinction these days: small range plus development pressure." Princeton's Andrew Dobson, the study's chief author, said that since most of the critical tracts were on private land, the federal government should offer private property owners tax incentives to protect endangered species.

Dobson said by focusing conservation efforts on hot spots, "you could get a big bang for your buck." But Wilcove added that all resources shouldn't be devoted to endangered species. "Many experts now believe it is essential to protect broad areas of the landscape to prevent species from reaching the endangered species list in the first place".

In an accompanying article in *SCIENCE*, Interior Secretary Bruce Babbitt and his science advisor H.

Ronald Pulliam said the study should "help maximize the protection of species at the least cost and inconvenience to the public". Wilcove said that the study shows that large parts of the country will likely never face an endangered species problem. Dennis Murphy of Stanford University said, "The ESA is not something that leaves a huge footprint across the United States".

Meanwhile, in a response to President Clinton's weekly radio address, Sen. Dirk Kempthorne (R/ID) said the Republican controlled Congress is ready to work with Clinton on environmental issues, especially the ESA. "Kempthorne pledged bipartisanship in revising the act," and added that he is "determined to write a new law that protects endangered species without putting communities and people at economic risk".

However, a recent report by the U.S. Public Interest Research Group (PIRG) and the Environmental Working Group (EWG) revealed that political action committees (PACs) that seek to "weaken" the ESA gave more than \$74 million to congressional candidates between 1989 and 1996. The donors included mining, petrochemical, agribusiness, timber and real estate interests. The top five PACs in total contributions to congressional candidates were the Realtors PAC, the Carpenters Legislative Improvement Committee., the Build PAC of the National Assn. of Homebuilders, the Union Pacific Fund for Effective Gov't and the Action Committee. for Rural Electrification. The PIRG/EWG report also listed recipients of these donations.

Sources: Greenwire Vol. 6, No. 151, 158, 168, and 178

Water Projects Debated

Environmental interests and conservation groups recently recommended that President Clinton reject 30 proposed and on-going water and flood control projects to save money and preserve wetlands for wildlife. The memo, sent to the White House Office of Management and Budget was signed by a coalition of some 90 groups. It recommended

that the Corps of Engineers (COE) phase out navigation on some waterways and focus instead on Mississippi River navigation, flood control projects in developed areas and environmental restoration on the Missouri River and elsewhere.

Some of the projects targeted included the Yazoo and Big Sunflower rivers in MS, the Red River in OK, the Los Angeles River in CA and the lower Mississippi River. The groups also advocated an end to shipping on the Missouri River and the Tennessee-Tombigbee Waterway in AL and MS, which they said carry relatively little cargo.

They said more jobs and revenue would be generated if the funds used for dredging and maintenance were used to develop recreation. "While the rest of the country must expect less from the federal government, a few wealthy landowners and their lobbyists in Washington continue to bring home the bacon," said Scott Faber, director of floodplain programs for American Rivers. The groups urged Clinton to use his new line-item veto authority on these COE projects.

In the meantime, defenders of river navigation fought back. Milt Moravek, projects director for the Central Platte Natural Resources District in NE, "said the river groups probably know little" about the proposed projects in his region. He said the Wood River project, estimated to cost \$11.8 million, would remove 1,800 structures from the floodplain, create some wetlands and protect wet meadows, and produce \$2.30 of benefits for every \$1 invested. Don Waldon, administrator of the Tennessee-Tombigbee Waterway which serves AL, MS, TN and KY, said that the Tenn-Tom has since 1988 helped to create more than 44,000 jobs, \$2.5 billion in industrial expansions and \$170 million a year in recreational spending.

However, a recent Associated Press article reporting on a study released on December 7 by the D.C.-based Worldwatch Institute supports the conservation groups' opposition to "boondoggle projects". That report

says that government subsidies, many of which damage the environment, cost government and consumers more than \$500 billion a year.

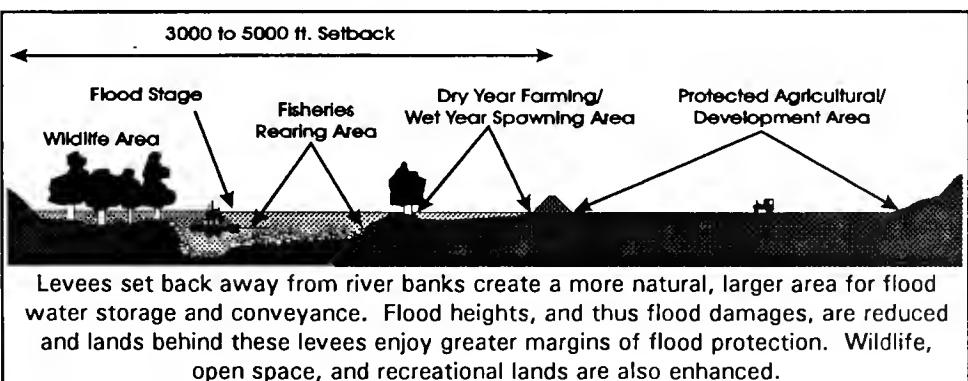
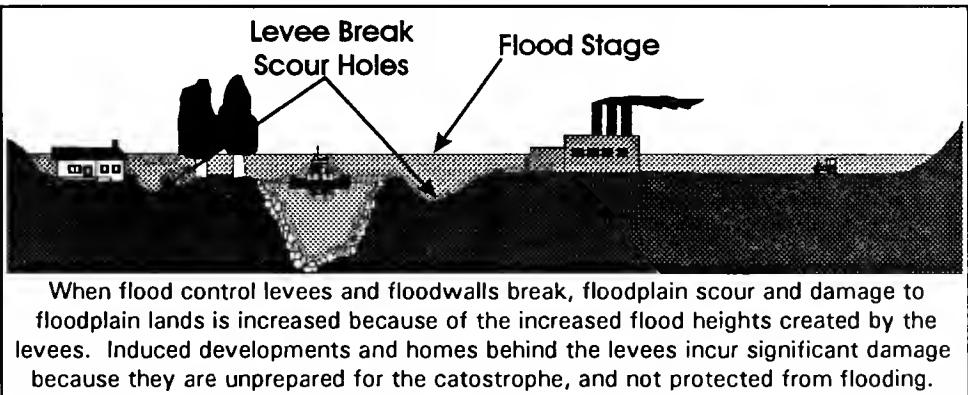
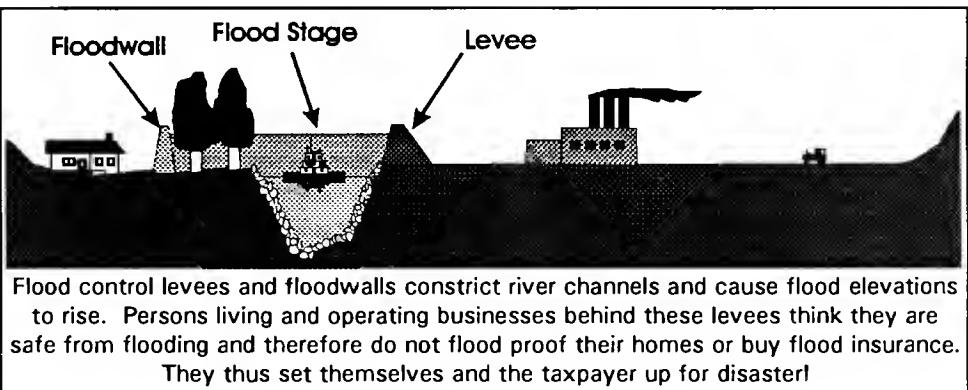
Sources: Source: USA TODAY, 1/3/97 and Greenwire Vol. 6, No. 152 and 168, and Reuters, Washington, D.C.

Flooding, Problems, Solutions

The heavy rains, snow and ice that have been overwhelming the West Coast in recent weeks have led to a variety of disaster and environmental problems, not unlike those faced by the Midwestern states in 1993, and by residents along the lower Missouri River again in 1995 and 1996. The heavy flooding in CA are putting

levees and water systems of the Sacramento-San Joaquin delta "to the test." If the levees "continue to fail," salt water could threaten the drinking water for millions of Californians, damage the state's irrigation supply and flood 55 islands dotted with homes and farms.

State Senate President Pro Tem Bill Lockyer (D) suggested the legislature should consider strengthening the levees and expand dams and reservoirs, while environmental interests, some engineers and federal emergency officials say it would be better to move residents out of flood plains and restore them to a natural state. These are the same debates that followed the 1993 Midwest flood and continue to this date (see figures



on the previous page). The Midwest flood cost the American taxpayer between \$14 and \$16 billion in disaster assistance spending.

An *L.A. TIMES* (1/6/97) editorial notes that "the current flooding is likely to resurrect old concerns and proposed solutions, none of which come easy or cheap." The price of strengthening all the old Sacramento Delta levees is estimated at \$1 billion, and Congress's defeat of the Auburn Dam proposal in June 1996 suggests "there will be no more big dam projects".

In the meantime, what could become the year's first test of the Endangered Species Act (ESA), with far reaching implications across the Nation, northern CA House members on January 21 introduced a measure to waive environmental rules to facilitate the rebuilding of flood-damaged levees in CA's Central Valley. The state has suffered \$155 million in agricultural loses after flooding inundated 150,000 acres and damaged levees "up and down the valley".

The bill calls for waiving the ESA when parties want to build, operate, maintain or repair flood-control devices following "catastrophic natural events" or to protect public health. It was sought by the CA Farm Bureau Federation and leaders of the valley's flood-control districts. This same cry followed the 1993 Midwest floods, where today it takes the form of calls for 500 year levees to protect floodplain farmland.

Rep. Richard Pombo (R/CA) complained that the current environmental permitting process can take years. But Clinton administration officials said they are already sensitive to the region's need for timely repairs; on January 17 the Army Corps of Engineers and the U.S. Fish and Wildlife Service signed an agreement to expedite repairs. The ESA already allows exemptions for presidentially designated disaster areas; 46 of CA's 58 counties have been so designated.

At Yosemite National Park, which last year played host to 4.1 million visitors, management may have been permanently altered by the Merced River's New Year's floods. Yosemite withstood as much as \$50 million in

damages and is not scheduled to reopen before March 1997. As part of its rebuilding process, park superintendent B. J. Griffin says she would like to move campgrounds and outdoor facilities away from the river and worker accommodations and offices out of the valley. She will try to vacate more than 100 acres of riverfront and meadows, letting them "revert to nature."

If she succeeds, Griffin will set a precedent for the national park system, said National Park Service Dir. Roger Kennedy. "She will be showing her peers that the job can be done right, and that will be especially encouraging to the big parks where we are struggling hardest with the impacts of huge crowds and traffic," he said.

In the San Francisco Bay area, the past three wet winters, along with creek restoration projects and pollution abatement, have produced the best conditions for chinook salmon, steelhead trout and other fish in two decades, according to state and federal officials. Scientists say the rains have sent freshwater plumes into the bay, attracting more fish to the region's streams. However, Jim Lecky of the National Marine Fisheries Service said the recent deluge is probably too much water, as swift currents in the Sacramento-San Joaquin Delta have likely killed eggs and newly hatched salmon. Lecky said the floods are not a "total disaster" for the fish, but that several species could be "adversely affected".

According to some, climate change may be responsible for the "relentless barrage" of rainfall and floods that continues to drench the Pacific Northwest. University of Oregon geography professor Patrick Bartlein said the area's record rainfall last year is "not inconsistent" with the global warming effects predicted by some climate studies. "As it gets warmer in winter, the hydrologic cycle will be getting more vigorous," he said. But "other scientists are skeptical." Oregon state climatologist George Taylor says he believes human activities "will" influence global climate, "but I also believe that there is a natural [fluctuation] to global temperatures." Taylor thinks that OR

is "on the threshold of a 20-year, cold-wet cycle".

Source: Greenwire Vol. 6, Nos. 166, 168, 175, 177

Climate Change - Implications for Water Managers

Records spanning the past 95 years indicate that more rain has been falling in hard one-day rainfalls in the past 25 years, and the U.S. has averaged about 5% more rainfall since 1970. In addition, increased precipitation has been occurring in cold weather, especially in the fall. Local increases of nearly 20% are not uncommon, although annual precipitation has decreased in some states, including CA, MT, WY, ND, ME, NH, VT, and parts of the southeast and central U.S.

Are these changes due to human-induced "global climate change"? Scientist don't all agree, but if these changes are indications of long term trends, then they pose challenges to water resources managers seeking to control nonpoint source pollution. Increased rainfall could change flow patterns and perhaps lead to increased flooding, streambank erosion, and changes in vegetation. On the other hand, some areas could experience decreased rainfall which could affect water supply or change irrigation patterns.

For example, a study for the city of Boston projects that the supply of water in its watershed will vary by location and season. Some areas may get rain increases that they need to serve the growing population. Other areas, however, may need to develop additional resources.

Other examples come from a study for the EPA's Office of Policy, Planning and Evaluation, Climate Change Division. EPA Region 6, with offices in Dallas, TX, is experiencing severe drought and has named a "Drought Czar" to cope with the problem; Region 5, headquartered in Chicago, has found that larger retention basins are needed to handle excessive rainfall; and Region 7 with offices in Kansas City, KS, is experiencing

alternating drought and flooding.

Finally, the Intergovernmental Panel on Climate Change finds that the demand for irrigation may increase in areas that presently do not use extensive irrigation. This demand could exacerbate current water shortages and irrigation-related pollution problems.

Statistically, a long-term change in climate appears to be the most likely explanation for the differences in rainfall. However, 20-25 years is too short a time to say with certainty that the change is not a normal fluctuation such as often occurs over decades. Even so, it is a situation that calls for careful monitoring. Climate and rainfall changes, whether temporary or permanent, are contingencies that test the practices water managers are using to protect quality.

Contact: Research Customer Service Group, National Climatic Data Center, 151 Patton Avenue, Asheville, NC 28801, (704) 271-4994; e-mail: research@ncdc.noaa.gov

Source: Nonpoint Source News Notes, Issue #46, October/November 1996

Water Detention/Water Quality

Stormwater retention in naturally functioning floodplain wetlands historically provided for flood control and water quality improvement. These wetlands essentially served as the kidneys of the Nation's landscape, and would do so again if restored.

The Southwest Florida Water Management District (SFWMD) conducted a study from 1990-1994 to answer the question: "What effect does residence time have on a wet-detention pond's ability to treat polluted runoff?". Such man-made wet-detention ponds play a similar role to floodplain wetlands in treating polluted runoff.

The SFWMD reshaped a wet-detention pond built to treat runoff from one of its field service offices in Tampa, FL to compare three different residence times. Of the three variations tested (2-, 5-, and 14-days) the 14-day

residence time showed the greatest improvement in water quality. The SFWMD has regulated stormwater systems under state law since 1984. Part of their role is to research how well these systems meet state water quality objectives. Detention ponds are the most commonly used method of stormwater management in FL, making them a likely candidate for study.

Supported, in part, by 205(j) grant funding from EPA, the district reshaped the wet-detention pond at its Tampa service office to compare the pollutant removal effectiveness of the three residence times. Wet-detention ponds consist of a permanent pool of water; an overlying fluctuating pool; and a shallow, vegetated shelf called the littoral zone that serves as a biological filter. In many ways they appear and function very similar to the way a river's natural floodplain backwater might in providing space for flood water retention and nutrient cycling.

In 1986, when the Tampa site was developed, regulations required that the pond treat a minimum 0.5" of runoff from the contributing area, restrict the fluctuating pool to no more than 8" above the control elevation, and include a planted littoral zone that extended no further than 3.5' below the control elevation. As a result, a 0.35 acre wet-detention pond was constructed to a depth of 1' below the control elevation (the lowest point where water can be released through the outfall structure) to treat runoff from the 6.5 acre drainage basin. The pond was sized to discharge water within 5 days, with no more than half of the total volume being discharged in the first 2.5 days. However, calculations revealed that this pond actually had an average residence time of 2 days.

In 1993, the district reshaped the pond according to changes in stormwater design criteria that increased treatment volume requirements from 0.5" to 1.0" of the contributing area and raised the permitted height of the fluctuating pool from 8" to 18". To meet these requirements, the district increased the depth of the permanent pool from

1' to a maximum of 5', while leaving the surface area the same. This increased residence time to five days, but the pond was not quite large enough to meet the 1.0" runoff treatment requirement.

The district then reshaped the pond one last time in 1994. To achieve a 14-day residence time, the area of the pond had to be increased to 0.5 acre while maintaining the depth of the pond at 5'. The district originally planned to excavate the pond to 9', the maximum depth allowed in the 14-day design, however a shallow confining layer at the site prevented this, forcing the district to increase land area instead. This design lowered treatment requirements from 1.0" to 0.5"; reduced the height of the fluctuating pool from 18" to 10"; and limited the depth of the littoral zone to 2', as opposed to 3.5', below the control elevation.

For each of the three pond designs, the district collected composite water quality samples using automated sampling equipment placed at the pond's inflow and outflow. Water quality parameters included nitrate-nitrite, phosphorus, metals, and total suspended solids. By analyzing data collected between June and January for the 2-day, 5-day, and 14-day residence times, the district determined that the longest residence time produced the most significant improvement in water quality. In fact, the 14-day design was so effective that it was able to reduce pollutant levels (of most constituents) from the inflow to the outflow enough to regularly achieve the 80% state pollutant reduction goal for these systems.

The major change implemented with the 14-day design is that it allows stormwater to be detained in the permanent pool, rather than limiting detention to the fluctuating pool. By allowing credit for treatment in the permanent pool, the design eliminates the need for deep stormwater ponds designed to stack stormwater above the permanent pool. In general, this shallower pond design results in higher dissolved oxygen concentrations, providing better pollutant removal efficiencies and more desirable aquatic

habitat. In addition, by limiting the range of fluctuation in the fluctuating pool to 10", the design provides a more stable environment that promotes the establishment of diverse vegetation in the littoral zone.

The 14-day detention design also benefits developers. By reducing the requirement for detention in the fluctuating pool from 1.0" inch to 0.5", the design reduces flood stage, allowing building elevations to be lowered and minimizing the need and expense of bringing in fill material. Allowing treatment in the permanent pool can also reduce the amount of land area needed for stormwater ponds from almost 6% to 5% (site conditions permitting).

The Tampa pond, with its 14-day detention design, continues to treat stormwater from the district's service office. Meanwhile, the district is pursuing future studies for this site and others focusing on the effectiveness and maintenance of these systems.

Restoration of floodplain wetlands to serve as wet-detention ponds would go a long way toward:

- reducing pollution levels in our rivers and streams,
- reducing flood damages and disaster payments,
- addressing the hypoxia problem of the Gulf of Mexico,
- providing important habitats for threatened and endangered wildlife,
- providing habitats for forage and game species, and
- providing recreational opportunities and investments for river communities.

For more details on the Tampa study contact: Betty T Rushton, Ph.D., Resource Projects Department, SFWMD, 2379 Broad Street, Brooksville, FL 34609-6899, (352) 796-7211; Fax (352) 754-6885.

Source: Nonpoint Source News Notes, Issue #46, October/November 1996

The Water-Wise Gardener

The Water-wise Gardener is a multi-faceted Extension program targeted to reduce homeowner

contributions to nonpoint source pollution through their participation in a progression of educational experiences focused on proper landscape management. This program brings traditional Extension teaching methods of field days, volunteer and demonstration sites, and one-on-one interactions with volunteers to the urban/suburban clientele to make them equal participants in the protection of our natural resources. This approach, developed under the direction of Extension Agent Marc Aveni, Extension Technician Ludwig Hartung, Extension Specialist Diane Relf, and Water Quality Program Coordinator Waldon Kerns, will provide a valuable model to others who work in public education.

The Water-wise Gardener handbook includes sections on planning, implementation, data evaluation and reporting, as well as examples of surveys, impact sheets, and marketing materials that have been successfully used in public education. The 52-page guide comes in a sturdy, three-ring binder and includes an extensive listing of the Cooperative Extension and other water-quality related resources from across the U.S.



The Water-wise Gardener was developed in response to the needs of Extension agents who work on a daily basis with residential homeowners and renters. Most homeowners have a high level of interest in establishing and maintaining attractive landscapes. In recent years, many agents have expressed concern over the impact such activities can have on our ground and surface water as a result of contamination from pollutants carried by water percolating through the soil

to the water table or washed into lakes and streams via storm and surface water runoff. Home lawns and landscapes contribute to such nonpoint source pollution when improper water management or chemical applications allow fertilizer- or pesticide-laden water to reach water sources. Our streams, lakes, rivers, and ultimately the Gulf of Mexico are threatened by overuse and abuse of fertilizers and chemicals by agricultural as well domestic applications.

Recognizing that attractive lawns and landscapes play a vital part in our communities by increasing property values, improving community appearance, and providing a critical link in the water cycle, a program was designed for the public with accurate, unbiased, university-based research and information. With special funding through the Cooperative State Research, Education, and Extension Service at the U.S. Department of Agriculture, the *Water-wise Gardener* program was developed over a five-year time frame.

To order copies of *The Water-Wise Gardener Handbook*, send check or money order for \$15, payable to Treasurer, VA Tech at: The Water-Wise Gardener, Office of Consumer Horticulture, 407 Saunders Hall, Blacksburg, VA 24061-0327; (540) 231-6254.

Toxic Spills

Toxic chemical spills or accidents occur in the U.S. more than 20 times a day, or almost once an hour, according to a study released on December 4 by the U.S. Public Interest Research Group and the National Environmental Law Center. The study, which used data from the Federal Emergency Response Notification System, found that more half of the 23,000 toxic chemical accidents reported between 1993 and 1995 occurred in only eight states -- TX, CA, LA, PA, OH, IL, GA and AK. While most of the accidents were "small scale", about 5% resulted in injuries, evacuations or deaths. The toxics most commonly released according to the study were ethylene

glycol, anhydrous ammonia, sulfur dioxide, sulfuric acid and PCBs.

The groups released the report on the 12th anniversary of the Bhopal chemical accident, calling on Congress to expand the Community Right to Know Act and on federal, state and local governments to promote accident-prevention policies.

In the meantime, a decision by the 5th U.S. Circuit Court of Appeals in New Orleans has U.S. prosecutors and environmentalists "fuming." The 5th Circuit recently ruled that prosecutors must show that alleged polluters knowingly discharged dangerous substances, reversing the federal Clean Water Act conviction of Attique Ahmad, a convenience-store owner who dumped 4,700 gallons of gasoline into the sewers of Conroe, TX, in 1994. One attorney familiar with the case said, "It's kind of hard to see how the guy didn't know he had done it." But Ahmad maintained it was an innocent error, and in his appeal said he was denied the chance to present two defense witnesses who would have testified that he was unaware he had dumped the gasoline.

In overturning the conviction, the 5th Circuit "acknowledged that in the environmental field, other courts had taken a more pro government approach." But the 5th Circuit pointed to two recent Supreme Court rulings which it said "undermined" the trial judge's reasoning, and it said the defense witnesses should have been allowed to testify.

Prosecutors "have been stepping up criminal enforcement of pollution laws" in recent years, arguing that they don't have to prove criminal intent in every aspect of the crime. Defense lawyers "cheered" the decision, with some saying they will use the ruling to gain more leverage on behalf of clients accused of "inadvertent" violations. Thomas Bartman of Vinson & Elkins, a Houston-based law firm that represents manufacturers and oil companies said, "We're sending out letters to lots of clients."

The Justice Dept. hasn't decided whether it will seek a Supreme Court

review of the ruling. But Michael Shelby, an assistant U.S. attorney in the case, vowed he would prosecute Ahmad again.

Sources: Greenwire Vol. 6, No. 151 and 164

Deformed Frogs

MN environmental officials have scaled back their research on frog deformities and asked federal authorities to take the lead. Deformed frogs have been found in as many as a dozen states, including AL, MI, MN, MO, OH, SD, WI, VT; as well as in Quebec, Canada and Japan, raising concerns about possible environmental causes.



According to Duane Anderson, water-quality section manager for the MN Pollution Control Agency, "For us to come out with some kind of answer on why frogs are deformed will take far more time and effort than is the mission of this agency." The state has provided \$151,000 for frog research to date. Anderson said his agency is interested in knowing whether the deformities are caused by a pollutant, but "If the determination was that the cause was pesticides, the pesticide industry would expect us to have [that conclusion] nailed nine ways from Sunday. We're not in a position to do that". State legislators and environmental interests expressed disappointment with the decision.

The USEPA has responded by establishing a reporting center that will begin analyzing the distribution and extent of deformed frogs nationwide. This spring, at least three of the EPA's 10 regional offices will start field investigations, while the agency will also monitor amphibian and reptile populations in several national parks.

Meanwhile, preliminary findings at the National Wildlife Health Center (NWHC) in Madison, WI, suggest that parasites, "a leading early theory," do not provide a full explanation of the deformities. Kathryn Converse of NWHC said the center has found no evidence of either viral or bacterial disease, but that viral infection has not been ruled out (William Souder, WASH. POST, 1/29).

Sources: Greenwire Vol. 6, Nos. 174 and 181.

Miscellaneous River Issues

Florida: The multibillion-dollar "replumbing" of south FL has begun with the launching of two South Dade County projects to revitalize Everglades National Park and northeast Florida Bay. The projects are being "hailed as the official start" of a "massive ecosystem restoration" that will stretch from the Kissimmee River south of Orlando to Florida Bay. Officials hope the \$275 million initiative will restore water flows to the Taylor and Shark River sloughs and bring "booming" populations of wading birds, crocodiles and fish to the area by early next century. But enviros and officials are also concerned the project may flood some area farms, destroy a colony of endangered Cape Sable seaside sparrows and pump pesticide- and fertilizer-contaminated water from defunct farms into the park. Stuart Applebaum of the Army Corps of Engineers said that "given the magnitude of the restoration," such worries are to be expected. But the Corps and the South Florida Water Management District are prepared to "fine-tune" the project as it progresses. Source: Greenwire Vol. 6, No. 169

Georgia: In what could become "one of the most contentious issues" of the GA legislative session, the state must decide whether to join interstate water compacts with AL and FL or settle water-allocation disputes in court. The issue "could set the course of development" in north GA for decades to come. One proposed compact with AL and FL would divide the waters of the Chattahoochee, Flint

and Apalachicola rivers, while another would share with AL the waters of the Alabama, Coosa and Tallapoosa rivers. Under the compacts, which must be approved by Congress and the states, governor-appointed representatives would work out the allocation of water for drinking, navigation, power generation, recreation and industry. Each state's portion of water would be determined after a \$15 million federal and state study of the river basins. Critics of the compacts say they do not mention environmental protection, do not require public input on water allocations, would allow governors to waive conflicting laws and may conflict with the federal Clean Water Act. Source: Greenwire Vol. 6, No. 171

Idaho: Breaching federal dams along ID's lower Snake River "promises the most benefits to dwindling salmon runs," according to a report released on December 10 by the Army Corps of Engineers (COE). The report narrowed down the COE's options to focus on breaching the dams or keeping the reservoirs behind them full. An earlier report by consulting engineers had led some to believe that the decision to breach the dams had been made. But Mike Mason, COE project leader, said that neither the first report nor the latest study means the decision has been made. Mason said the agency will spend the next three years studying the pros and cons of the various options. Source: Greenwire Vol. 6, No. 155

Idaho/Montana/Oregon/Washington: The governors of ID, MT, OR and WA on December 11 received an advisory panel's recommendations for changes in the region's electricity-supply system, including a number of environmental commitments. The main goals are to ensure customers can choose their electricity supplier by July 1999 and to clarify the role of federally owned power agencies in the new order. But the advisory panel also called for "broad-based" discussions to resolve fish and wildlife issues and for investments of about \$210 million for energy conservation and renewable energy. Upon receiving the report, the governors appointed a four-member panel to produce an action plan by February 1997. Source: Greenwire

Vol. 6, No. 156

Illinois: Illinois officials on January 28 announced 34 recommendations for reducing pollution and siltation in the Illinois River Valley, saying "they finally understand" what fishers, hunters and enviros have been "sounding the alarms" about for four decades. The unfunded proposals include plans to increase tax incentives for landowners who improve water quality, encourage local governments to adopt ordinances reducing the amount of stormwater runoff, and create and restore wetlands. Lt. Gov. Bob Kustra (R), who headed a two-year study of the river "said he is hopeful" that the watershed will qualify as a national priority area and be eligible for U.S. Fish and Wildlife Service grants (Wes Smith, CHICAGO TRIBUNE, 1/29). Source: Greenwire Vol. 6, No. 182

Minnesota: The Irving, TX-based Darling International Inc. has agreed to pay a \$4 million penalty -- the largest ever assessed in Minnesota for an environmental crime -- illegally dumping animal wastes from a rendering plant into the Blue Earth River. U.S. Attorney David Lillehaug said the company will plead guilty under the federal Clean Water Act to "five counts of discharging pollution and submitting false water-sample reports." The discharges, which occurred between late 1991 and late 1992, allegedly included blood, animal entrails, and high concentrations of ammonia and total suspended solids. Former wastewater-treatment plant operator Gary Keck and two other employees allegedly doctored water samples and submitted false reports to "conceal" the pollution. "Of equal concern besides the environmental crime of pollution is the charge that the company covered up these violations," Lillehaug said. Darling Chairman and CEO Dennis Longmire denied that animal entrails were dumped. But he said that some of the other charges were correct and resulted from the company "blowing the whistle on itself". Source: Greenwire Vol. 6, No. 159

Montana: One third of MT's streams don't meet federal water quality standards, according to a coalition of

environmental groups that is threatening to sue the state over the issue. If the suit is filed and is successful, "it could have ... big implications for the logging, mining, agriculture and housing construction industries," reports the *BOZEMAN DAILY CHRONICLE*. The coalition, including American Wildlands, the Alliance for the Wild Rockies and Friends of the Wild Swan, says MT is violating federal law by not placing "impaired" bodies of water on strict monitoring and cleanup schedules. In a release, the coalition said it wants to "jump start a lagging state effort" to control water pollution. Chris Levine of the MT Dept. of Environmental Quality acknowledges that all or part of some 9,000 streams and lakes in the state fail to support at least one of several uses, including fishing, drinking water, recreation, and industrial and agricultural operations. But Levine says currently he alone is responsible for monitoring and listing water bodies, and he can donate no more than a third of his working time to the program. Source: Greenwire Vol. 6, No. 151

Nebraska: The U.S. Fish and Wildlife Service (USFWS) on December 3 rejected a proposal to relicense the Kingsley Dam and related hydropower projects on the Platte River in NE unless more water and land are reserved for "rare" animals downstream. In its decision, the USFWS found that the Federal Energy Regulatory Commission's relicensing proposal would not ensure better stream flows and habitat for the whooping crane, least tern, piping plover or pallid sturgeon. The rejection "adds new urgency to negotiations" between CO, WY and NE to develop a water conservation and habitat improvement agreement for endangered birds and fishes within the North and South Platte River basins in the three states. The USFWS said the dam's owners and users -- the Central Nebraska Public Power and Irrigation District and the Nebraska Public Power District -- could implement a series of "costly" fixes to protect the species or transform the license into basinwide restrictions that the three states can work out. Source: Greenwire Vol. 6, No. 151

New Hampshire/Vermont: Despite six years of falling sulfur-dioxide (SO_2) emissions from coal-fired power plants, the Northeast's lakes, streams and forests have shown little to no improvement in acidity levels, according to NH-based researcher Gene Likens. Likens's research shows that decades of acid rain have robbed surface waters of minerals such as calcium, weakening their natural defenses against acid precipitation. His findings are supported by VT biologists who say that 25 of VT's most acidic lakes "have seen no improvement." Likens and other scientists at NH's Hubbard Brook Experimental Forest, "one of the nation's oldest and most respected acid rain research stations," also estimate that the contribution of nitrogen-oxide (NO_x) emissions to acid rain has increased from 25% to 50%. Meanwhile, research by the U.S. Forest Service (USFS) and USGS "suggests" that acid rain is releasing toxic aluminum from the soil, putting stress on red spruce trees that may slow their growth. According to USFS scientist Walter Shortle, "This new problem is more subtle and could even be more damaging in the long run." But other researchers have not found the same trend. Likens suggests another 30% cut in acid-rain-causing emissions beyond current standards. But both the USEPA and the electric power industry are urging patience while new pollution-control equipment continues to be phased in under existing requirements. Source: Greenwire Vol. 6, No. 164

Ohio: Business leaders, environmentalists and government planners are weighing plans to increase oxygen levels in Ohio's Cuyahoga River, including the possibility of installing mechanical aerators along the waterway. The aerators would pump dissolved oxygen into the river along a 5.5-mile navigation channel that has consistently fallen below regulated oxygen levels. Although the plan is technically feasible, no one has broached the subject of who would fund the project, which could run up to \$30 million. Meanwhile, a new report from a panel of fisheries scientists suggests that aeration alone, while perhaps sufficient to meet oxygenation

standards, would not be enough to restore the channel's ecology unless the river underwent habitat restoration. With this in mind, Roger Thoma of the OH EPA has suggested widening bulkheading along the banks of the river to create a "habitat highway" for spawning fish and their fry. Scientists have "cheered" Thoma's plan, but Joe Mazzola of the Flats Oxbow Assn., a regional business group, called it "tremendously impractical". Source: Greenwire Vol. 6, No. 154

Meanwhile the agency that takes legal action against OH's worst polluters is burdened with a backlog of environmental enforcement cases, some dating back to 1984, reports the *DAYTON DAILY NEWS*. State records show 272 cases pending in the state attorney general's office, not including administrative appeals, current criminal enforcement cases and legislative action. The backlog exists at a time when the USEPA and environmental groups "are questioning whether several states are lax in their enforcement of the nation's environmental laws." The USEPA may review OH's enforcement efforts based on recent reports that 40% of OH's industrial facilities regularly violate their discharge permit limits. OH ranks fourth in the nation for carcinogen releases to air, water and land, and fifth for total releases of toxic chemicals. Attorney General Betty Montgomery said she would rather spend money on cleanup and enforcement than costly litigation. Source: Greenwire Vol. 6, No. 177

Pennsylvania: Environmental fines imposed by PA fell 25% to \$7.7 million in FY 1995-1996, "the first full year of an administration philosophy that emphasized partnership instead of penalties." According to a December 1996 special report by the state Dept. of Environmental Protection (DEP), the decline in fines reflects improved compliance with environmental laws and has not affected pollution cleanup efforts. The DEP report was requested by the state House in June 1996 after newspaper reports said reduced fine totals could threaten pollution cleanup. Phil Coleman, chair of the Sierra Club PA Chapter, questioned the credibility of the report

and said he doubted there has been greater compliance with environmental laws in the state. Source: Greenwire Vol. 6, No. 165

Tennessee/North Carolina: Tennessee environmental officials on December 16 said they would continue their efforts to clean up the Pigeon River despite the USEPA's recent approval of a permit variance allowing Champion International to continue dumping waste water into the river. The USEPA approved the permit revisions for Champion's paper mill in Canton, NC, about 40 miles upriver from TN, over the objections of TN officials and TN Gov. Don Sundquist. The USEPA said the permit meets TN water quality standards and is one of the most stringent permits ever issued to a pulp and paper mill. But TN Dept. of Environment and Conservation Commissioner Justin Wilson disagreed. Source: Greenwire Vol. 6, No. 161

Virginia: The VA attorney general should have the power to prosecute polluters as criminals, and money from fines paid by polluters should be used to help businesses cut pollution, according to a report just released by the VA Governor's Commission on Environmental Stewardship. The report, which explores ways to improve VA's environment, contains 53 suggestions for Gov. George Allen, including expanding current environmental policies, developing brownfields and using prisoners to maintain parks. Allen said he was "very glad" the report "reinforced many initiatives" already being worked on by his administration. But some observers noted that the report did not examine the recent findings by the General Assembly's Joint Legislative Audit and Review Commission that characterized Allen's administration as lax on pollution enforcement. Political observers said the governor's commission, headed by Attorney General James Gilmore, was formed in part to strengthen the environmental credentials of Gilmore, the presumed GOP candidate for governor next year. Source: Greenwire Vol. 6, No. 160

West Virginia: Parsons & Whittemore Inc. on January 17 announced that it had put on hold its controversial plans

to build a \$1.1 billion pulp mill in Mason County, WV. The company said it would reconsider the project if it obtains all the necessary permits. The state Division of Environmental Protection will keep working on permits for the facility unless the company formally withdraws its applications. Environmentalists -- who say emissions from the mill would damage forests in WV, KY and OH -- have asked the state to void the proposed facility's air pollution permit because of the company's postponement. Opponents of the plant also argue that its chlorine bleaching process would release dioxin into the Ohio River. Pulp mill supporters have argued that the mill would not significantly damage WV forests and streams. But according to a document released on January 22 under the Freedom of Information Act, a Parsons & Whittemore study concluded the logging necessary to feed the plant would create environmental problems. Source: Greenwire Vol. 6, No. 179

EPA Says Some State Enforcement Laxed

"Worried that some state governments are neglecting federal environmental laws," the Clinton administration plans to closely investigate enforcement practices in about a dozen states, according to senior USEPA officials. The officials say the environmental agencies in PA and some other large industrial states are reporting "only a handful" of major pollution violations to the USEPA, "suggesting that inspectors in those states may be turning a blind eye to pollution problems."



After the USEPA's Inspector General's office found that PA should have reported at least 10 times as many serious air pollution violations as it did in 1995, the USEPA decided to investigate other states' records. However, officials would not reveal which states were likely targets.

USEPA Administrator Carol Browner said, "Unfortunately, lately we have seen a number of states that are emboldened by the anti-environmental sentiment that began here in Congress, and they are retreating from their commitment to enforce the laws." PA Environmental Protection Secretary James Seif accused the USEPA of using a "bean-counting approach" and making public attacks on one state after another.

The USEPA is also "stepping up its campaign" against states that have adopted laws protecting companies from punishment or public disclosure when they voluntarily report violations of pollution rules. The agency has warned ID, MI and TX that their recent passage of such laws may jeopardize their authority to issue some Clean Air Act permits. A similar, so-called enviro-auditing law was signed into law by OH Gov. George Voinovich on December 13.

Environmental and labor groups are pushing the USEPA to take over other regulatory functions from several states, "like the enforcement of regulations controlling pollution of drinking water supplies." The Environmental Defense Fund and the Oil, Chemical and Atomic Workers International Union has petitioned the agency to withdraw TX's authority to regulate the injection of waste deep into the ground.

Source: Greenwire Vol. 6, No. 157

Clinch River Partners, Pearlymussels, and Patience

Community-based conservation requires vision, perseverance, imagination, humor, and knowledge about a great number of topics, ranging from forage budgets to good salesmanship, says Leslie Colley, who for 18 months has participated in such

a project in Tennessee's Hancock County.

The Nature Conservancy's (TNC) Clinch River Community Project provides area farmers with technical and financial support for pasture renovation, livestock exclusion fencing, alternate water sources, and streambank stabilization. The ultimate goal is to protect and preserve some of the richest freshwater mussel shoals in the world.

The county has minimal industry and little development, and agricultural runoff from tobacco and beef operations pose a significant problem for both aquatic fauna and farmers. Farm size averages 80 acres, and farming practices are passed from generation to generation. The narrow Clinch River valley is surrounded by steep ridges, a beautiful, wild landscape with fertile alluvial soils along the river.

Hancock County is geographically isolated, sparsely populated (6,700 residents), one of the most financially strapped counties in the nation, and outsiders are viewed with suspicion. Building acceptance and the community's trust isn't easy, but it is the foundation of the Clinch River Community Project. According to Colley the work would be impossible without the confidence of the community.

Trust also depends on the willingness of program sponsors to be committed to, and involved in, the community. TNC understood early on that it would have a difficult time gaining entry into the area without a partner who already enjoyed a presence here. Lindy Turner, the Clinch-Powell Resource Conservation and Development Council's infinitely capable coordinator, was an indispensable contact and has provided invaluable guidance and expertise. She understands agriculture, and she knows how to move the project along gently and deliberately.

Colley maintains office space in the Hancock County courthouse and lives in the project area. She spent her first three months just becoming familiar

with the people and their way of life. The process, though logical, is complicated and slow, but she managed to meet a broad cross-section of people in the county, including respected farmers, local leaders, woman's club members, and the high school's Future Farmers of America.

At the forefront of TNC's work is the importance of balancing science and people. Input from landowners regarding land use, future plans, concerns, and new ideas is paramount, and Colley approaches each one from the standpoint of "What can she do to help you?" Farmers especially must believe that the work makes sense and that the land and their herds will benefit. The rarity of the birdwing pearlymussel (*Lemiox remosus*) or the spiny riversnail (*Io fluvialis*) is generally not a priority for them.

Whether it's moving six hogs out of the headwaters of a stream or providing pedestrian gates in a fence for river baptisms, dialog is frank, and individual history is respected. TNC participates in every aspect of the work on each farm, thus freeing the farmers from having to fill out ag program applications, hire subcontractors, or perform all the legwork. Landowners are encouraged, however, to contribute as much time, labor, and equipment as they choose. In other words, the program is voluntary, nonthreatening, easy, and beneficial for landowners; and it works! The finished product generates pride not only for farmers, but for the surrounding community as well.

During her first year in Hancock County, TNC helped build two miles of fence along the river, plant 5,000 trees, relocate a small hog lot, install two alternate water troughs, host four successful community meetings, publish articles in the local newspaper, and made a lot of friends. Over the next three years, with the support of EPA section 319 funding, TNC plans to continue to work with landowners to implement BMPs. They also hope to expand the effort beyond building fences and planting trees to finding alternatives to beef cattle and tobacco farming (e.g., blueberry farming) that will improve the economic health of

the community while protecting its resources.

The only way to protect some places, especially river systems with a history of small-scale agriculture like the Clinch, is to work with local landowners to get the job done. A local presence is the best investment. It engenders trust within the community and connects us to the people we are helping and the place we are trying to protect.

Contact: Leslie Colley, Clinch River Community Project, Hancock County Courthouse, P.O. Box 347, Sneedville, TN 37869, (423) 733-2100; FAX (423) 733-4348.

Source: Nonpoint Source News Notes, Issue #46, October/November 1996

WI Water Quality Demonstration Project

Dairy farmers in Green Bay, WI, are reducing surface and groundwater contamination while saving money. Helped by the East River Water Quality Demonstration Project (WQDP); more than 50 producers have reduced their use of commercial fertilizers and pesticides without decreasing crop yields. Their tool -- Integrated Crop Management, or ICM.

WQDP staff and consultants work with the farmers to help them plan fertilizer and pest control strategies -- usually a mix of chemical and nonchemical tools. First, the producer uses soil tests and an inventory of on-site nutrient sources such as manure to calculate the amount of commercial fertilizer needed to sustain crop yields. Then consultants help calibrate manure spreaders and make recommendations for crop rotations. In the last three years, participating

farmers have reduced fertilizer applications by nearly 2,500 tons and pesticide applications by 24 tons. At the same time each farmer saved, on average, \$5,000/year.

Fertilizer suppliers have also adapted their operations to support ICM. They have replaced lost fertilizer sales with services such as soil testing, pest scouting, and nutrient management planning. In Brown County, for example, the number of crop consultants has grown from six to nine in recent years.

The 50 or so farmers who benefit from their participation in the project are quick to point out the lessons they have learned. One of the keys to their success, they say, is good record keeping -- of crops, pest management techniques, and fertilizer and manure applications. Another is frequent field monitoring by a professional crop consultant, who recommends treatment only if crop losses will exceed the cost of control. For example, if the cost/acre of spraying for an insect is \$10 and the insect is causing only \$8 in damage, the farmer saves money by not using pesticides.

The East River WQDP began in 1990. The goal of this five-year project was to encourage farmers to adopt research-based practices that protect and improve groundwater and surface water quality while maintaining or increasing farm profitability.

The Project is located in the Fox River Basin of the lower Green Bay, in Brown County, WI. The East River contributes more than 10% of the phosphorus that reaches lower Green Bay and an equal amount of suspended solids. Overall land use in the lower Fox River watershed is 69% agricultural, 13% urban, and 18% wooded/natural.



Now that the demonstration project has completed its activities, its impacts can be seen throughout northeastern WI. A number of the practices initially cost-shared or demonstrated by the East River WQDP, including ICM, have become widely accepted. For example, farmers in seven counties have adopted a manure bartering program modeled after the East River WQDP, and information from its research projects has been requested nationally and internationally.

Clearly, ICM is improving the economic and environmental vitality of the East River rural community. According to Kevin Erb, nutrient management specialist, "ICM represents a philosophical shift on the part of farmers and farm suppliers. Through ICM, they're taking a stake in the future of the family farm and the rural community with an understanding that ICM heralds the future of agricultural technology in Wisconsin."

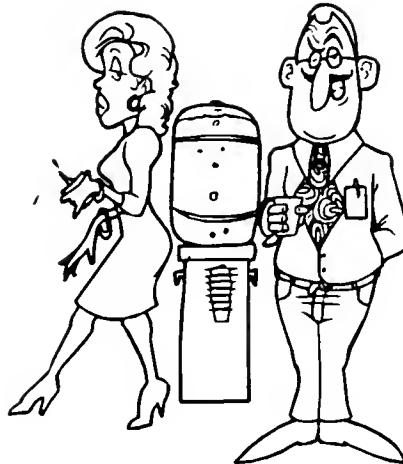
Contact: Kevin Erb, University of Wisconsin-Extension, 1150 Bellevue Street, Green Bay, WI 54302, (414) 391-4610, e-mail: kevin.erb@ces.uwex.edu.

Source: Nonpoint Source News Notes, Issue #46, October/November 1996

Male vs Female Views on the Environment

According to an early December *Roper Starch* poll women are more concerned than men about protecting the environment. Fifty-one percent of women think environmental laws and regulations have not gone far enough, compared to 38% of men; and only 14% of women say the laws and regulations have gone too far, while 23% of men believe they have. Also, 82% of women would be willing to pay \$0.25 more per gallon for gasoline that reduces pollution from their cars by 50%, compared to 68% of men.

In other findings, 62% of survey respondents believe that technology will find a way of solving environmental problems, and 58% percent believe that federal



government spending should be shifted to environmental programs from other areas.

The survey, now in its fifth year, was commissioned by the National Environmental Education and Training Foundation and funded by a number of ski resorts, private foundations and companies, including Phillips Petroleum. Times Mirror Magazines commissioned the survey for each of its first four years.

Roper Starch surveyed by telephone 1,004 adult Americans in May 1996; margin of error is +/-3%. Results of combined survey follow:

1. Do you think enviro protection laws and regulations have:

	1996	1992
- Not gone far enough	45%	63%
- Struck about the right balance	28	17
- Gone too far	19	10
- Don't know	9	10

2. Should all endangered species be saved regardless of the costs, or should policy take cost into consideration?

- Policy should consider cost	60%
- All species should be saved regardless of the costs	32
- Depends on species	4

3. Should government be required to compensate landowners for land devalued by endangered species or wetland restrictions?

- Yes	72%
- No	20
- Depends upon how much	3

- Don't know

4. How willing would you be to pay \$0.25 more per gallon for a gasoline that reduced auto pollution by 50%?

- Very willing	36%
- Somewhat willing	39
- Not too willing	12
- Not willing at all	11

5. Can enviro protection and economic development go hand in hand, or must we choose between them?

- Hand in hand	63%
- Choose between	26
- Depends/don't know	11

6. When it's impossible to find a reasonable compromise between economic development and enviro protection, which is usually more important?

- enviro protection	63%
- Economic development	21
- Depends	10
- Don't know	6

7. How well do the media inform you about environmental issues?

- Excellent job	2%
- Good job	23
- Fair job	49
- Poor job	24

8. Do you think of yourself as:

- An active environmentalist	21%
- Sympathetic but not active	53
- Neutral	20
- Unsympathetic	2

Source: Greenwire Vol. 6, No. 150

BASINS Software

A new breed of desktop mapping and modeling software designed for water quality analysts and watershed managers is helping resource managers access large amounts of point and nonpoint source data. EPA's BASINS is one such system.

Developers of the program envision BASINS as an invaluable tool for watershed planning and for developing cost-effective approaches to environmental protection. Because many factors affect water quality in a watershed, and because each watershed is different, BASINS users will be able to review large amounts

of pollutant source information, chemical discharge data, and streamflow information for every watershed in the continental U.S. They will also be able to add to the data contained in the BASINS software, thus ensuring that it will remain a source of current and reliable data for each watershed.

BASINS software, designed to be used on a personal computer, will bring together information collected by many federal, state, and local government and private agencies. This makes it possible for users to locate potential sources of pollutants and estimate the effects of pollutants on drinking water supplies, recreational waters, aquatic life, wildlife habitat, and other critical uses of waters in a watershed. Users can focus on selected stream sites or an entire watershed, evaluating a number of "what if" scenarios and predicting how discharges of pollutants from industrial and municipal point sources and agricultural, urban, and other nonpoint sources impact downstream water quality, aquatic communities, and wildlife.

The software contains two water quality models. One model combines nonpoint source discharges with facility discharges and calculates changes in pollutant concentrations as they are diluted and flow downstream. The other model uses the weather data that is stored in the software to calculate runoff of sediment, nutrients, bacteria, and toxic substances from mixed land use areas and also calculates how this runoff affects water quality.

BASINS requires a 486 (or better) IBM compatible PC with a CD-ROM and ArcView 2.1 software; as well as 16 MB of RAM. A user's guide contains background information on the supporting databases and instructions on how to install, navigate, and use the various BASINS modules. EPA is currently involved in training regional and state staff to use the program effectively. The program was expected to be released to others in late 1996.

Contact: Jerry LaVeck, Office of Science and Technology, Standards

and Applied Science Division (4305), U.S. EPA, 401 M Street, SW, Washington, DC 20460, (202) 260-7771; FAX (202) 260-9830; e-mail: laveck.jerry@epamail.epa.gov] Source: Nonpoint News Notes, Issue #46, August/September 1996

VA 20172-0605, (703) 661-1582; FAX (703) 661-1501.

Source: Nonpoint News Notes Issue #46, October/November 1996

Guidelines for Excellence in Environmental Education

Developers of activity guides, lesson plans, and other instructional materials, and the teachers who use them will soon have a tool for evaluating the wide array of products available for environmental education," says Bora Simmons, a professor at Northern Illinois University.



The North American Association for Environmental Education (NAAEE) founded the National Environmental Education Standards Project to propose a set of voluntary guidelines for developing and selecting quality environmental materials. The outcome, Environmental Education Materials: Guidelines for Excellence, which Simmons says, "is grounded in a common understanding of effective environmental education," was to be published in October 1996.

Essentially a method to quickly identify and remedy water quality problems, this book identifies the five major sources of agricultural pollution (sediment, nutrients, pesticides, animal wastes, and salts); discusses the ecology of freshwater systems; and provides field sheets for observers to use on land and receiving waters.

Observations are recorded, weighted, and ranked on the field sheets to assess conditions; then, when a particular nonpoint source pollutant is identified, it can be correlated with conservation and best management practices to determine-and enact-possible solutions. The method is suitable for neighborhood streams and larger areas, and the accuracy of the method improves with use. Cost is \$29.95 plus \$5.50 shipping and handling.

Contact: Terrene Institute, Attn. Order Department, P.O. Box 605, Herndon,

Guidelines recommends that environmental materials be judged on six key characteristics: fairness and accuracy, depth, emphasis on skills building, action orientation, instructional soundness, and usability. Several "indicators" will accompany the various guidelines listed for each characteristic. The indicators are clusters of attributes that can help educators determine whether one or more of the six characteristics are embodied in the materials being reviewed.

A second objective of the Guidelines is to help teachers of environmental

education meet standards set by traditional disciplines. Quality environmental education can provide students with opportunities for synthesizing knowledge and experience across disciplines and facilitate the learning of science, civics, social studies, mathematics, geography, and the language arts. By using the Guidelines, educators can develop meaningful environmental education programs that build on and integrate traditional subjects.

The National Environmental Education Standards Project is also developing a teacher's resource guide to quality environmental education materials. The resource guide will include a broad range of education materials, including curriculum guides, CD-ROMs, laser disks, and videos.

Panels of classroom teachers, environmental educators, curriculum developers, and environmental specialists will review all material in the resource guide according to criteria

drawn from Environmental Education Materials: Guidelines for Excellence. The first volume of the teacher's resource guide was to be published in late 1996. Contact: Bora Simmons, Northern Illinois University RO. Box 299, Oregon, IL 61061, (815) 753-0205 x113, FAX (815) 732-4242.

Source: Nonpoint Source News-Notes, Issue #46, October/November 1996

Posters/Electronic Game Boards

Three posters: Wetlands are Wonderland!, River Environment, and Creek Critters produced by the Tennessee Valley Authority can be converted to electronic game boards to teach identification of water plants, animals and macroinvertebrates. The posters are free of charge, but the conversion kits are \$10.00 to \$12.50

each.

Contact: Ray Norris, 4021 Sunnybrook Drive, Nashville, TN 37205-3834.

Minnows as Canaries

The Ft. Worth Department of Environmental Management has produced a video and manual explaining how to construct and use the Stream Sentinel, a low cost, long-term method of monitoring storm drainage outfalls using six fathead minnows in a two-liter soda bottle.

Both are available at no cost from Charles Howell, EPA Region 6, First Interstate Bank Tower at Fountain Place, 1445 Ross Avenue, 12th Floor, Suite 1200, Dallas, TX 75202-2733, (214) 665-8354. Or contact Brian Camp, Ft. Worth DEM, 5000 Martin Luther King Highway, Ft. Worth, TX 76119, (817) 871-5450.

Meetings of Interest

February 25-March 1: 1997 International Symposium on Human Dimensions of Natural Resource Management in the Americas, Colorado State University, Ft. Collins, CO. Contact: Jennifer Pate, Symposium Coordinator, Human Dimensions in Natural Resources Unit, Colorado State University, Ft. Collins, CO 80523, (970) 491-7729, FAX (970) 491-2255, e-mail: jpate@cnr.colostate.edu, WWW address <http://www.cnr.colostate.edu/~hd-nru/hdsympo.html>

March 8-11: Sixth International Symposium on the Ecology of Fluvial Fishes, Univ. of Lodz, Lodz, Poland. Contact: Tadeusz Penczak, Dept. of Ecology and Vertebrate Zoology, Univ. of Lodz, 12/16 Banacha St., 90-237 Lodz, Poland, 011/048-42-781364.

March 11-13: 53rd Annual Meeting of the Upper Mississippi River Conservation Committee, Riverport Inn, Winona, MN. Contact: Jon

Duyvejonck, UMRCC, 2269-48th Ave. Court, Rock Island, IL 61201

March 3-14: 13th Annual International Program for Port Planning and Management, New Orleans, LA. Sponsored by Board of Commissioners of the Port of New Orleans, World Trade Center of New Orleans, Louisiana State University National Ports and Waterways Institute, and University of New Orleans. Contact: Timothy E. Joder, CUPA/LUTAC, University of New Orleans, New Orleans, LA 70148, (504) 280-6519, FAX (504) 280-6272. Telex: 58-7496.

March 10-13: 13th Annual Meeting of the Association of State Wetland Managers, Wyndham Garden Hotel in Annapolis, MD. Contact: ASWM, P.O. Box 269, Berne, NY 12023-9746; (518) 872-1804, FAX (518) 872-2171, WWW: <http://members.aol.com/ASWMI/homepage.html>

March 14-18: 62nd North American Wildlife and Natural Resources

Conference, Omni Shoreham Hotel, Washington, D.C. Contact: Richard McCabe, Wildlife Management Institute, 1101 14th Street, NW, Suite 801, Washington, D.C. 20005, (202) 371-1808, FAX (202) 408-5059.

March 17-21: Ninth Conference on Research and Resource Management in Parks and Public Lands, Albuquerque, NM. Contact: The George Wright Society, P.O. Box 65, Hancock, MI 49930-0065, (906) 487-9722, e-mail: gws@mail.portup.com, WWW: <http://www.portup.com/~gws/gws97.html>

April 24-25: 29th Annual Meeting of the Mississippi River Research Consortium, Holiday Inn, La Crosse, WI. Contact: Mark Steingraeber, U.S. Fish and Wildlife Service, Fishery Resources Office, 555 Lester Avenue, Onalaska, WI 54650.

April 28-May 2: 21st Annual Conference of the Association of

State Floodplain Managers, Little Rock, AR. Contact: Executive Office of ASFM, (608) 274-0123.

May 7-8: A Conference on Restoration of Lost Human Uses of the Environment, Washington, DC. Contact: Cecil Consulting, 1300 Two Allen Center, 1200 Smith St., Houston, TX 77002, (713) 646-5589.

May 7-9: An American Wetlands Month Celebration: Communities Working for Wetlands, Alexandria, VA. Sponsored by U.S. Army Corps of Engineers; Bureau of Reclamation and Office of Surface Mining, U.S. Dept. of Interior; USEPA, Wetlands Division, Headquarters and Region 5; Federal Highway Admin., U.S. Dept. of Transportation; NOAA, U.S. Dept. of Commerce; Natural Resources Conservation Service, U.S. Dept. of Agriculture; TVA; Terrene Institute; Wildlife Habitat Council; World Wildlife Fund; and other co-sponsors. Contact Stacey Satagaj, Terrene Institute, 4 Herbert Street, Alexandria, VA 22305. (703) 548-5473. Fax (703) 548-6299. E-Mail: terrene@gnn.com

May 15-16: 24th Annual Conference on Ecosystems Restoration and Creation, Sheraton Grand Hotel in Tampa, FL. Contact: Frederick J. Webb, Dean of Environmental Programs, Hillsborough Community College, Plant City Campus, 1206 N. Park Rd., Plant City, FL 33566, (813) 757-2104.

May 18-21: National Watershed Coalitions Fifth National Watershed Conference, Nugget Hotel, Reno, NV. Contact the NWC at (703) 455-4387.

May 19-20: Wildlife Habitat Council's 1997 Wildlands Conference, Atlanta, GA. Contact: WHC, 1010 Wayne Avenue, Suite 920, Silver Spring, MD 20910, (301) 588-8994, FAX (301) 588-4629, e-mail: whc@cais.com.

May 25-28: GWS, the Eighth Global Warming International Conference and Expo, in New York City. Hosted by Columbia University and

the Global Warming International Center USA. Contact: Global Warming International Center, PO. Box 5275, Woodridge, IL 60517, (630) 910-1551; FAX (630) 910-1561.

June 1-6; Society of Wetland Scientists 18th Annual Meeting, Montana State University, Bozeman, MT. Contact: SWS, P.O. Box 1897, Lawrence, KS 66044, (913) 843-1221, FAX (913) 843-1274.

June 3-4: Pathogens and Diseases of Fish in Aquatic Ecosystems: Implications in Fisheries Management, Portland, OR. Contact: Ray Brunson, Olympia Fish Health Center, U.S. Fish and Wildlife Service, 3704 Griffin Lane, Suite 101, Olympia, WA 98501, (360) 753-9046, FAX (360) 753-9403.

June 3-5: Fisheries Management under Uncertainty - International Symposium, Bergen, Norway. Contact: Ann Gro Vea Salvanes, Dept. of Fisheries and Marine Biology, Univ. of Bergen, Bergen, Norway, Anne.Salvanes@ifm.uib.no.

June 6-9: Society for Conservation Biology 1997 Annual Meeting, University of Victoria, Victoria, B.C., Canada. Contact: Pat McGuire, Conference Management, Div. of Continuing Studies, University of Victoria, Box 3050, Victoria, BC, Canada V9W 3P5, (604) 721-8774, e-mail: SCB97@uvcs.uvic.ca.

June 29-July 3: Annual Symposium of the American Water Resources Association and the Universities Council on Water Resources, Keystone Resort, Summit County, CO. Contact: AWRA, 950 Herndon Parkway, Suite 300, Herndon, VA 22070-5531, (703) 904-1228; or UCOWR, 4543 Faner Hall, Mailcode 4526, Southern Illinois University - Carbondale, Carbondale, IL 62901-4526, (618) 536-7571

July 14-15: 1997 Rocky Mountain Symposium on Environmental Issues in Oil and Gas Operations, Colorado School of Mines, Golden, CO. Contact: Ms. Sherri Thompson, U.S. BLM, Lakewood, CO 80215, (303) 239-3758, FAX (303) 239-3799, e-mail: sthompso@co0261wp.coso.co.blm.gov

July: III International Symposium on Sturgeon, ENEL Training Centre, Piacenza, Italy. Contact: Dr. P. Bronzi, ENEL spa - CRAM via Monfalcone, 15-20132 Milan (Italy) phone: + +39-2-72243412 or 3452, FAX: + +39-2-72243496, E-mail: bronzi@cram.enel.it.

August 18-20: Wild Trout VI, "Putting the Native Back in Wild Trout", Montana State Univ., Bozeman, MT. Contact: Robert Gresswell, U.S. Forest Service, Pacific Northwest Research Station, 3200 SW Jefferson Way, Corvallis OR 97456, (541) 750-7410, gresswer@ccmail.orst.edu

August 24-28: 127th Annual Meeting of the American Fisheries Society, Monterey, CA. Contact: Paul Brouha, (302) 897-8617, Ext. 209.

Early November 1997: Ecological Restoration as a Key Element of Regional Conservation Strategies - 9th Annual Society for Ecological Restoration Conference, Ft. Lauderdale, FL. Contact: SER, 1207 Seminole Highway, Suite B, Madison, WI 53711, (608) 262-9547

May 23-28, 1998: First International Ictalurid Symposium - Catfish 2000, Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180, (573) 751-4115, FAX (573) 526-4047.



Congressional Action Pertinent to the Mississippi River Basin

Agriculture

H.R. 246 (Peterson, D/MN) to restore the authority of the Agriculture Secretary to extend existing and expiring contracts under the **Conservation Reserve Program**.

H.R. 247 (Peterson, D/MN) to allow for a one-year extension on **Conservation Reserve Program** contracts expiring in 1997.

Fish and Wildlife

H.R. 374 (Young, R/AK) amends the **Sikes Act** to enhance fish and wildlife conservation and natural resources management programs.

Flood Insurance

H.R. 230 (McCollum, R/FL) to ensure that insurance against the risk of catastrophic natural disasters, such as hurricanes, earthquakes, floods, and volcanic eruptions, is available and affordable, and to provide for

expanded hazard mitigation and relief.

Forests

H.R. 101 (Baker, R/LA) amends the National Forest Foundation Act to extend and increase the matching funds authorization for the foundation, to provide additional administrative support to the foundation, to authorize the use of investment income, and to permit the foundation to license the use of **trademarks, tradenames, and other such devices** to advertise that a person is an official sponsor or supporter of the Forest Service or the National Forest System

Parks

H.R. 104 (Bartlett, R/MD) authorizes the **private ownership and use** of National Park System lands.

H.R. 302 (Skaggs, D/CO) a bill entitled the **"Rocky Mountain National Park Wilderness Act of 1997"**.

Takings

H.R. 95 (Solomon, R/NY) to ensure that federal agencies establish the appropriate procedures for assessing whether federal regulations might result in the taking of private property, and to direct the Agriculture Secretary to report to the Congress with respect to such takings under programs of the Department of Agriculture.

Water and Wetlands

H.R. 128 (Crapo, R/ID) to preserve the authority of the states over waters within their boundaries, to delegate the authority of the Congress to the states to regulate water.

H.R. 227 (McCollum, R/FL) directs the Secretary of the Army to conduct a study of mitigation banks.

Source: Land Letter, STATUS REPORT, Vol.16, No.2



Mississippi Interstate Cooperative Resource Association
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River Crossings

Nature's Way

Volume 6

March/April 1997

Number 2

MICRA On Line

By popular demand MICRA has opened an America On Line account, and is now on line at IJRivers @AOL.COM. We also have a Web Site under construction at <http://members.aol.com/IJRivers>. Our last issue of *River Crossings*, Vol. 6, No. 1 was placed on the Web, but some folks had difficulty accessing it. So, obviously, we still have a little work to do, but hope to be up, running, and networked with several other Web Sites within the next few months. Thank you for your patience!

American Heritage Rivers Initiative

During his State of the Union message, President Clinton announced a new "American Heritage Rivers Initiative." Clinton said, "Tonight, I announce that this year I will designate 10 American Heritage rivers, to help communities alongside them revitalize their waterfronts and clean up pollution in the rivers, proving once again that we can grow the economy as we protect the environment."

Katie McGinty, Chair of the White House Council on Environmental Quality, said that the program will target river communities for focused federal assistance, including grants and technical assistance. McGinty said that federal brownfields money and Farm Bill money would be funneled to the

projects, as would resources from the National Endowment for the Arts and the National Endowment for the Humanities. She said, "This is about celebrating our rivers as part of history, as part of our culture, as an incredibly important environmental and economic resource for the country."

The Clinton Administration will designate a community representative to help implement each community's vision and provide a link between the feds and experienced local people who have worked on river efforts in the past, McGinty said. She said the Cabinet will take nominations from local communities for 10 river stretches and make recommendations

to Clinton within 90 days.

Competition began almost immediately between various groups and communities vying to propose candidate American Heritage rivers:

- *American Rivers* will propose the Mississippi, Columbia, Hudson and Colorado rivers — all of which "played a major role in our cultural and historical development".
- An aide to Sen. Chuck Robb (R/VA) said that the Dept. of Interior is encouraging Robb and Richmond officials to propose VA's James River.
- Providence, RI Mayor Vincent "Buddy" Cianci (I) says the city's Woonasquatucket River is "strongly positioned as a prime contender".
- Environmental groups in the Con-

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necticut River Valley are pushing to have the Connecticut River listed. The *Connecticut River Watershed Council* and the *CT chapter of the National Audubon Society* have led early efforts to gain designation for the Connecticut River -- which at 410 miles is the longest river in New England.

• Sen. John Chafee (R/RI) has asked Clinton to list the **Blackstone and Woonasquatucket rivers** in RI and MA. Chafee cited both rivers' historical significance and drew attention to an ongoing greenway project along the Woonasquatucket that is restoring abandoned industrial sites.

Meanwhile, Rep. George Nethercutt (R/WA) said he is concerned that the Program will "impose the weight of the federal government" on the entire Columbia River system "against the will of the people who live there." At a House Appropriations subcommittee budget hearing on 3/26, Interior Secretary Bruce Babbitt told Nethercutt that he doubted any river would be included in the program unless the move had the support of the local community.

The Clinton Administration has provided "few details" on designation criteria, but Babbitt told the panel that the U.S. Fish and Wildlife Service could provide "technical help" and the USEPA might assist communities with wastewater issues.

Sources: Greenwire Vol. 6, No. 186, 191, 197, 204

Flooding and Floodplain Management

The National Weather Service on 3/17 predicted that heavy snows in the upper Midwest and the Rocky Mountains could lead to the worst flooding in a decade in parts of the Mountain West, the eastern Dakotas, southern MN and WI, and northern IA. Areas at risk include the lower Missouri and upper Mississippi rivers, much of WA state and northern OR, central CA, the Great Lakes region and the southern U.S. from eastern TX to SC.

Massive flooding along the Ohio River has already led to more than 50

deaths, contaminated water supplies, and more than \$300 million in damages to homes and businesses throughout WV, OH, IN and KY. The damage has caused many to question whether too much development has been allowed in floodplains along the river.

The Sierra Club on 3/17 charged that recent flood damage in the Midwest may have been aggravated by the legal destruction of wetlands. The group advocated a "crash program" to restore wetlands in flood-prone states and suggested holding builders and Realtors financially responsible for damages to homes they sell in floodplains and drained wetlands. A Sierra Club report said that of the states damaged by recent floods, OH has lost 90% of its wetlands since the 1780s; IN, 87%; KY, 81%; AR, 72%; and TN, 59%. Other flood-prone states with high wetlands losses include CA with 91%; IA,

89%; and MO, 87%.

The National Assn. of Home Builders (NAHB) accused the Sierra Club of using "gross exaggerations to scare the public". NAHB President Daniel Pincus said, "Shame on the Sierra Club for using tragic natural events such as floods as political weapons. ... Our message to environmental organizations is a simple one: If you really want to protect the environment, work with us, not against us".

Rep. Richard Pombo (R/CA) contends that the Endangered Species Act (ESA) restrictions prevented maintenance of CA levees and allowed rodents and insects to burrow into them, contributing to their collapse during flooding this winter. Environmental interests have attacked Pombo's claims, and five House Democrats from CA sent a letter to him on 3/7 saying the levees broke because of "too much water," not because of

River Crossings

Published by

**Mississippi Interstate Cooperative Resource Association
(MICRA)**
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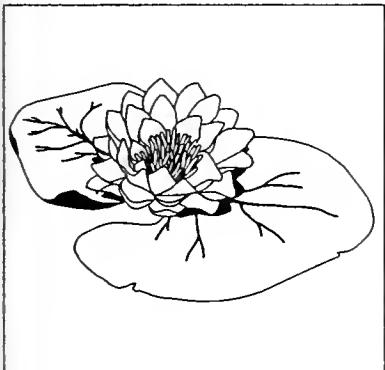
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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

the ESA.

Interior Dept. Assistant Secretary John Garamendi is pushing new flood control strategies in CA, including paying farmers to let their land flood and removing federal subsidies for floodplain development. Garamendi said federal officials are considering buying land or obtaining easements to restrict development in flood-prone areas and creating new river bypasses to divert storm runoff away from urban areas.

The MICRA Coordinator/ Executive Secretary was among others invited in mid-February to a CA post flood meeting and tour of flooded areas. Concepts for floodplain management and habitat restoration efforts along the Missouri and Mississippi rivers were passed along to CA state and federal officials. A SAST-like effort to integrate science into floodplain management (similar to that used for the Upper Mississippi River Basin in the aftermath of the 1993 floods) is planned for CA.



The Army Corps of Engineers (Corps) in CA is also undergoing a "change in thinking" from building dams to natural restoration projects, including widening waterways and constructing wetlands to slow down and spread out flood waters. The Corps is considering such restoration projects along the Sacramento River near Yuba City, Marysville and Sacramento.

These suggestions echo conclusions of a 1994 Galloway Report that decided the best way to prevent damages from flooding is to relocate people away from floodplains. But according to environmental interests, the

Clinton Administration's intended policy shift "has been only marginally felt," as federal officials admit that disaster-aid programs and efforts to urge residents to leave floodplains "have not persuaded enough people to move to higher ground."

Source: Greenwire Vol. 6, No. 185, 206 and 215

Flood Tolerant Crops

Floodplain farmers in many parts of the Mississippi River Basin struggle each year in their efforts to raise corn and soybeans on lands that are often too wet for conventional farming practices. Farmers on the Minnesota River have decided to do something about this dilemma.

Galen Halverson, one of those farmers, is looking for answers. "There has to be other things you can do," Halverson said. "We just haven't had imagination enough to see them, or haven't been flexible enough to do them." Even though the soil on Halverson's Yellow Medicine County farm is rich, glacial till, extensive drainage practices have eliminated an estimated 90% or three million acres of the prairie pothole wetlands that once comprised the MN River watershed. Absent wetlands to hold it, water now races rapidly to the river. Spring snow melt and both summer and fall rains bring with them the threat of flooding. In most years, flooding is becoming a sure bet.

Todd Lein, a Rice County farmer, has already found a better way; turning 70 acres of flood-prone land into pasture. His renter had given up on the land in despair because of consecutive years of flooding damage to his corn and soybean row crops. Lein is making the very same land pay its way by using a rotational grazing system. His grasslands can withstand the occasional, but usually brief summer floods that had so plagued his renter. He does not worry that floods will destroy his crops, or wash sediments and pollutants into the river, and Lein is now working with *American Rivers* to show others a new way of doing business.

The *American Rivers Minnesota River*

Floodplain Project is seeking to demonstrate that alternative agricultural uses of the floodplain are economically viable, and beneficial to the environment. Lein is meeting with farmers such as Halverson and encouraging them to try alternative practices on their river lands. He hopes to establish a number of demonstration sites along the river.

Because of these efforts, farmers are beginning to see profitable options to corn and soybeans, and they are looking for such options. Last year, *American Rivers* sent surveys to 900 people who own 40 or more acres of land along the mainstem of the MN River. Some 270 returned the surveys, and 150 attended three workshops held this winter in river communities.

Lein said landowners are genuinely interested in finding uses that actually benefit the river environment. A 59% majority of respondents rated the need to restore the river's natural filtration system as their top reason for trying alternative floodplain land uses. The survey also found that landowners are interested in options such as:

- raising renewable energy crops,
- timber and pulp-wood,
- leasing their land for hunting, or
- converting it for grazing, hay and forage production.

The problem is that landowners are unsure of how to proceed; citing equipment costs, markets, and lack of experience as the main obstacles faced in converting to alternative crops. Lein said the *American Rivers* project aims to address those issues, and help provide answers.

The *MN River Basin Joint Powers Board*, is serving in an advisory role to the *American Rivers* project. Steve Hansen, its director, finds it hard to over-state the importance of what the project seeks to do. Hansen believes that solving the river's troubles will depend on finding economically viable land use options. Floodplain landowners will adopt environmentally beneficial practices if their economics can be demonstrated. Voluntary compliance, not governmental regulation, is the key to making positive changes,

according to Hansen.

The challenge is identifying just what alternative practices will work in the modern farm economy and market. Until now, only limited work has been accomplished in this area. "It is definitely and absolutely an imperative part of the puzzle that has to be worked out," Hansen said.

American Rivers is using computers and engineering to help solve this issue. Barr Engineering, Minneapolis, will examine the economics and environmental impacts associated with various alternative land uses. For example, the computer models will look at:

- the economics of raising flood-tolerant grasses on floodplain lands,
- how different practices will affect water quality, habitat, and flood losses, and
- the recreational benefits that might be created.

The models will give farmers the sort of information that Hansen said is so desperately needed. In the process, they will be looking at agriculture as few others ever have. Lein said that a wide variety of alternative crops and practices are being examined. One of the most promising comes under the heading of agri-forestry.

Many advocates in the basin are encouraging the growth of hybrid poplar trees, because there is a growing demand for wood fiber in the state's particle board and paper industries. Other are eying the trees as possible fuel. Hybrid poplars raised on marginal river bottoms could be harvested as "biomass" for energy production. The prospect of producing "green electricity" from agricultural crops is appealing for those working to reduce greenhouse gasses. The crops remove as much carbon dioxide while growing as they produce later when consumed as a fuel.

The Department of Energy has approved a \$4.1 million grant to help a farmer cooperative in the upstream portion of the Minnesota River who plans to develop a plant which would use the stems of alfalfa plants as a biomass fuel. The state's largest elec-

tric utility has committed to purchasing power from the cooperative, known as the *Minnesota Valley Alfalfa Producers*. Its proposed biomass plant is scheduled to go on line in 2002.

Other, smaller scale options for farmers include the old adage that some things are best when just left alone. According to Patrick Moore, a director of a citizens group known as *Clean Up our River Environment* (CURE), there is money to be made by leasing land to hunters and other recreational users. He tells the story of one farmer who found the best of both worlds. He restored a wetland and allowed natural vegetation to return, and he now derives economic value from the hunting opportunities it created. In the meantime, his own crops benefit from the flood control gained by restoring the wetland.

Lein said there are cottage industries developing along the river. The crafting of attractive furniture from naturally grown willows is one example. Others are exploring the possibility of harvesting wild plants for decorative uses.

Lein would like to see the once familiar wild rice return to the river valley, and he'd like to re-introduce it. The river basin once supported huge stands of the native grass, evidence of the biological health the river once enjoyed. Wild rice is not tolerant of poor water quality or flooding.

Lein is hardly alone in being willing to try alternative uses for the land. Paul Homme, a farmer in Renville County, is one who has done so successfully. For three consecutive years, Homme watched mid-summer floods destroy promising fields of corn and soybeans. "I got real sick of that," said Homme. His cure came with the planting of a low alkaloid, reed canary grass. Even though the field continues to flood once or twice a year, it still produces, and can be used by livestock for grazing. He will also harvest the grass as hay. Best of all, the grass' firm root structure assures that the field will still be there when the waters recede. Homme likes the fact that it all makes economic sense. "You can always sell cattle," he ex-

plained. He is now realizing an economic gain from the flood-troubled lands.

Others, however, are not realizing such gains. John Kral, a farmer in Nicolet County is not realizing a gain on land that his father had farmed for decades. The flooding, he said, has gotten worse due to increased tiling of upstream fields. He is still looking for alternative uses for his lands, and is doubtful that the alternative uses now being touted will work for him. "It'd be nice to use it for something else," Kral said, adding that he will be watching to see what *American Rivers* learns on its demonstration sites.

Lein said he is hopeful that some floodplain demonstration projects could begin as early as this year. If successful, *American Rivers* may be able to provide landowners along the river with real choices for an improved river and economy in just a few years time. To learn more about the Minnesota River Project, visit the following Web site: www.soil.agr.umn.edu/research/mn-river

Source: Mississippi Monitor, Vol. 1, No. 1, Mar. 1997

Climate Change and Floods

As the global climate continues to warm, extreme flooding like that recently experienced in the western U.S. is expected to become more frequent, reports a senior NOAA scientist. Although it is impossible to link any particular weather or climate event to global warming, and present-day climate models are not sophisticated enough to accurately pinpoint regions of the globe where changes will be the largest, extreme flooding is expected to become more frequent across the U.S. due to an increase in precipitation extremes, said Thomas Karl, senior scientist at NOAA's National Climatic Data Center in Asheville, NC.

Observations in the U.S. since the beginning of the 20th century indicate that intense precipitation events have already increased by 20%, and cold

season precipitation has increased by nearly 10%, Karl said. An increase in the intensity of precipitation has led to an increased flood potential. This happens because increased concentrations of greenhouse gases in the atmosphere lead to an increase in mean global temperatures. As the global climate warms, the hydrological cycle is affected because a portion of the heating will go into evaporating larger quantities of water from the earth's surface. As global temperatures increase, the atmosphere can also support greater amounts of water vapor. In general, an increase in the proportion of extreme and heavy precipitation events would occur where there is enough atmospheric instability to trigger precipitation events.



This means more flooding with an increase in extreme precipitation events, but also more droughts. Droughts arise where and when the atmosphere is not favorable to precipitation, and the evaporated moisture is transported to other regions. The additional evaporation from the surface leads to a drying of the soil, and more severe and widespread droughts.

Comparisons of climatologies, and from climate models run with present-day and doubled carbon dioxide concentrations, reveal some dramatic changes in the hydrologic cycle as the global climate warms, Karl said. When carbon dioxide concentrations are doubled, the expected frequency and extent of extreme droughts and intense precipitation in the U.S. increase (more than 5 cm/day) and in Canada (more than 2.5 cm/day), some models showing a 3-4 fold increase. There is also a distinct increase in wintertime or cold season precipita-

tion.

Recent events, like the flooding last fall and the Northwest flooding this winter, offer examples of the kind of situations that are expected to be associated with an increased risk of occurrence' Karl said.

Source: NOAA Legislative Informer, January 1997, Issue #21

ESA Ruling Favors Landowners

The Supreme Court on 3/19 gave landowners a new means of fighting environmental regulation. The Endangered Species Act (ESA) can now be used to try to quash federal protections that landowners think go too far. The unanimous decision overturns a 1995 appeals court ruling that said only people with an interest in preserving endangered species could use the ESA to challenge federal regulation of scarce land and water resources.

According to Gregory K. Wilkinson, who represented OR ranchers and irrigation districts before the high court this is a big decision. "The opinion levels the playing field. It does not put people who have economic interests at a disadvantage in terms of getting into the courthouse," Wilkinson said. The ruling gives landowners new legal standing to challenge environmental law, but whether they will ultimately prove successful in loosening government's grip on land-use policy will be known only as individual cases are brought and resolved in courts across the country.

Already, property rights advocates are predicting that the high court decision will embolden landowners whose development plans have been thwarted because of perceived threats to endangered animals and plants. By expanding protections for property owners, the court succeeded in accomplishing something that congressional Republicans had hoped to achieve through legislation. A bill introduced this year by House Republicans would specifically recognize the rights of property owners to file citizen suits over alleged ESA violations.

The historic ESA is believed to be responsible for the comeback of the bald eagle, the American alligator and numerous other species that have recovered since its enactment in 1973. Among its provisions is one that allows "any person" to sue to stop the government or anyone else from threatening the nation's species or from otherwise violating provisions of the Act. The "citizen suit" provision has been used for years by environmentalists to challenge what they believed was lax government enforcement of the ESA.

The 3/19 case (*Bennett v. Spear*) began when ranchers and irrigation districts sued the government for reducing water flows from two reservoirs on the OR-CA border to protect the Lost River sucker and shortnose sucker, which the U.S. Fish and Wildlife Service (FWS) had listed as endangered species in 1988. The ranchers alleged that a report prepared by the FWS, urging reduced water allocation, was scientifically flawed and violated the ESA. Without the usual water supply, Wilkinson said, ranchers could not feed their cattle.

The lower courts said the ranchers group lacked legal "standing." The 9th U.S. Circuit Court of Appeals emphasized that the ESA was intended to protect the habitat of delicate animals and plants and that only plaintiffs who allege an interest in the preservation of species fall within the interests protected by the law. But the ESA also requires the FWS to consider any economic impact of designating an endangered species, and the challengers contended that the law must cover anyone affected by action under the Act, including those economically harmed.

In the *Bennett v. Spear* case Justice Antonin Scalia, writing for the Supreme Court, said the provision permitting "any person" to sue should be broadly interpreted, adding that "the overall subject matter of this legislation is the environment . . . a matter in which it is common to think all persons have an interest." The court also said landowners could object to biological opinions made by the FWS, which lead to an endangered species listing. The government had contend-

ed that property owners had no such right because such opinions, however crucial, are not a "final" agency action.

Environmental groups generally were restrained in their criticism of the court's opinion. Having fought tenaciously for the right to sue the government over its enforcement of species-protection laws, some groups were loath to publicly oppose granting the same right to others. Bob Irvin of the Center for Marine Conservation said attacks on the ESA will backfire by proving the need for stronger ESA enforcement. Irvin said, "When people look at implementation of the ESA, they're going to see that there are problems with it, and those problems are causing the number of threatened and endangered species to continue to grow. This is not a defeat for environmentalists". At the Interior Department, officials said they expected few changes in ESA administration as a result of the ruling.

Sources: The Washington Post, By Line Article by Joan Biskupic and Joby Warrick, 3/20/97; and John Nielsen, "All Things Considered," National Public Radio, 3/19/97.

One-Third of Native Species Imperiled

At least 1/3 of all U.S. plants and animals are at risk of extinction, according to a 2/27 report of *The Nature Conservancy* (TNC). The report says that at least 110 of the nation's 20,500 known plant and animal species have become extinct since the 17th century, while another 427 are missing and possibly extinct.

Using its own databases and information collected by the *Natural Heritage Network*, a public-private partnership involving agencies in every state, TNC tracked the status of 20,500 species, arriving at what it calls the "most comprehensive appraisal available on the health" of U.S. species. In all, the environmental group says that freshwater species "fared the worst" proportionally in its study, while flowering plants had the greatest number of species at risk.

Across the nation, TNC found that states with the most extinctions tended to be the ones with the most species or ones that have experienced "intense human alteration of the landscape." Hawaii topped the list with 26 presumed extinctions and 243 possible extinctions. On the mainland, AL has experienced 24 presumed extinctions and 74 possible extinctions, followed by CA with 25 presumed extinctions and 21 possible extinctions.

The Northeast and the upper Midwest, on the other hand, "have been little affected by species extinctions," the group says. TNC found no extinctions in WA and few losses throughout the Northwest -- but the group tempered that good news by reporting that declines in the runs of salmon and other fish have led to the loss of 100 distinct fish populations. To preserve the country's remaining species, TNC says that efforts must be focused on protecting those species at greatest risk and healthy ecosystems that still exist.

On a positive note, the report found that about 2/3 of the nation's species "appear to be relatively secure at the moment." Still, the group cautions that extinctions are "sure to grow if human activities continue to degrade our nation's ecosystems".

A group of 15 environmental groups from across the nation has informed President Clinton (in a letter) that his Administration has "severely weakened our nation's commitment" to the Endangered Species Act (ESA). The group calling itself the *Endangered Species Coalition* criticized:

- the Administration's ESA funding levels,
- its "no surprises" and "safe harbor" policies,
- its failure to list certain rare species and critical habitat, and
- its moves to drop several candidate species from the ESA list.

Among the groups signing the letter were the *Biodiversity Legal Foundation*, *Defenders of Wildlife*, the *Sierra Club* and various regional groups.

Meanwhile, a draft of an ESA reauthorization bill being circulated by

Sens. Dirk Kempthorne (R/ID) and John Chafee (R/RI) is still ~~4~~ weeks away" from introduction, according to a Kempthorne spokesperson. Kempthorne has been negotiating for a year with Senate Environment and Public Works Committee ranking Democrat Max Baucus (D/MT) and drinking water, fisheries and wildlife subcommittee ranking member Harry Reid (D/NV) to produce a consensus bill.

Jack Mingus of the *National Endangered Species Act Reform Coalition*, a landowner-oriented group, said he is "exceptionally pleased" with the draft bill, even though it does not include provisions to compensate landowners for loss of land values due to ESA enforcement. But Michael Senatore of *Defenders of Wildlife* said a provision in the bill requiring the U.S. Fish and Wildlife Service (FWS) to choose the least costly or burdensome recovery plans would slow development of the plans and lead to litigation. The bill would also lift requirements for review of federal actions that could adversely impact wildlife. The rollback of rules requiring agencies like the U.S. Forest Service and Army Corps of Engineers to consult on certain projects with the FWS is the "most controversial" part of the draft bill.

The Kempthorne and Chafee bill would also:

- establish independent peer review for species-listing decisions;
- codify the Interior Department's "no surprises" and "safe harbor" policies, which protect small landowners and those involved in habitat conservation plans; and
- create an "incidental take" permitting process for small landowners.

A coalition of environmental groups including the *Environmental Defense Fund*, *Sierra Club* and *National Audubon Society* have sent the senators a list of more than 20 suggested ESA improvements. The groups call for:

- stricter listing deadlines,
- better recovery plans and tracking of rare species, and
- financial incentives for landowners who go beyond ESA requirements.

Sources: Greenwire Vol. 6, No. 186, 188, 197, 201

AAAS Tackles Environmental Issues

Leaders of the world's largest organization of scientists on 2/15 urged researchers "to redirect their efforts toward heading off a global environmental crisis of unprecedented scale." It was "the first such call" in the history of the American Association for the Advancement of Science (AAAS), according to AAAS President Jane Lubchenco, a marine biologist at OR State University.

The AAAS Board of Directors voted unanimously to launch an "intense dialogue" about the state of the environment and the role of scientists in protecting it. The board will seek to publish a paper summarizing its views in a scientific journal.

Scientists attending the AAAS annual meeting in Seattle held discussions and presented research on a range of environmental issues, including human exposure to pollution, population growth, environmental accounting, global climate change, nuclear waste disposal, agricultural sustainability and biodiversity. In one session, participants focused on developing methods for valuing services that are normally provided by healthy ecosystems.

Columbia University professors Geoffrey Heal and Graciela Chichilinsky, along with the Smithsonian Institution's Thomas Lovejoy, announced an ambitious research agenda to determine the economic benefits provided by 371 UNESCO biosphere reserves worldwide, including their role in cleaning water, handling waste, regulating the climate and controlling pests. Economist Heal estimates that using various technologies to replace these natural services would cost on the order of \$30 trillion, or more than the world's total economic output.

Heal also proposed the creation of new financial instruments called "earth securities," which would fund ecosystem preservation projects and yield returns based on savings generated by avoiding the use of more costly technology-based systems. In sessions cosponsored by the *President's Council on Sustainable Development* (PCSD), scientists discussed the links

between human population growth, global climate change and biodiversity, and "the policy-oriented science needed" to implement the PCSD's recommendations.

The loss of timber jobs in the Pacific Northwest stems from years of overcutting rather than more recent measures to protect old-growth timber and the northern spotted owl, according to a study presented at the conference by Univ. of Wisconsin sociologist Bill Freudenburg. Freudenburg said the greatest decline in timber employment in OR and WA occurred between 1947 and 1964, before the passage of modern environmental laws. Freudenburg said, "We found no statistically believable evidence of a 'spotted owl' effect on logging jobs".

At the meeting, a group of biologists called for greater federal involvement in studying invasive species that have crowded out native plants and animals in U.S. waterways. More than 200 scientists plan to send a letter to Vice President Al Gore next month requesting the formation of a presidential commission to study the threat of exotic invaders.

In a "featured" lecture, Thomas Lovejoy – a wildlife biologist, director of the Smithsonian Center for Biodiversity Conservation, and a Greenwire analyst – said environmental issues "have moved from the foreign policy fringe to become central national security issues for diplomats." Lovejoy said that while the link between environmental concerns and diplomacy is not yet fully developed, "in just the past three years or so" environmental factors have become a part of diplomatic discussions on economic security, peace-making and protection of individuals' health and wealth.

Source: Greenwire Vol. 6, No. 195



Dams and Rivers - A Look Downstream

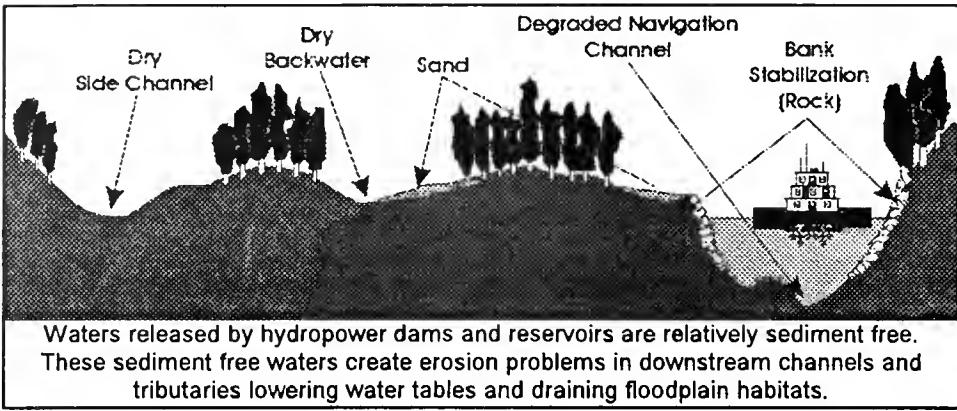
The downstream environmental consequences of dams including eroding river banks, changes in waterfowl habitat, concerns for safe recreational use, and the loss of river sand bars are addressed by a recent USGS report: *"Dams and Rivers: Primer on the Downstream Effects of Dams."* The report outlines the role of science in restoring or otherwise altering these downstream effects, and looks at dams and rivers in seven selected areas of the country:

- the Upper Salt River in central AZ;
- the Snake River in ID, OR and WA;
- the Rio Grande River in NM and TX;
- the Chattahoochee River in GA;
- the Platte River in WY, CO and NE;
- the Green River in UT; and
- the Colorado River in AZ.

The 94-page, richly illustrated report has a special section on the role of science in the management of dams to minimize downstream impacts. For example, research provides hard data on environmental changes that might occur if water releases are altered. By using computer modeling, management plans can be developed that best balance user needs with environmental concerns. Monitoring and long-term data sets of stream flow trends can help in the development of better predictions of downstream water and sediment movement below dams.

"Scientists are increasingly being called upon to suggest dam operation regimes that will minimize a particular negative impact to the downstream environment," said Robert Hirsch, USGS chief hydrologist. "Scientific insights gained from hydrology, however, must be integrated with recommendations from the fields of biology, economics and engineering. We must look more and more to interdisciplinary scientific approaches to help those who manage the nation's water and other natural resources."

"Any scientific recommendation that alters a dam's operation must be evaluated in the context of the people whose lives will be most directly affected -- people whose interests may be as disparate as the river runner who



wants steady in-stream flow and the farmer who wants to irrigate crops with low-salinity water," Hirsch said. "To better balance those issues in the management debate, we must be able to provide the critical science foundation upon which sound and effective decisions can be made."

Highlights from the featured rivers and the issues they represent include the following:

- The **Upper Salt River**, a natural stream in central AZ, has all of the characteristics of a healthy, unregulated river. Flow and sediment transport vary widely from one season to another and from year to year. Occasional high-magnitude floods move cobbles and boulders into bars, which form rapids that attract recreationists. Native riparian (along the river bank) vegetation forms a dense band above flood level and non-native vegetation is sparse. The river is always in the process of adjusting its channel to the equilibrium that exists between erosion and sediment deposition. The Salt River offers a standard against which to compare regulated rivers.
- The **Snake River** in OR, ID and WA is one of the most extensively dammed rivers in the West. The Hells Canyon Complex of dams on the Snake River in OR, ID and WA have severely altered the normal dynamics of the river's flow. The dams have limited reservoir storage and limited value for flood control and are used to provide hydroelectric power at times of peak demand through a grid system that provides electricity throughout the West. Dams on the Snake block historical salmon spawning runs. Fre-

quent high-flow releases have caused depletion of sand in the river channel downstream from the dams.

- The **Rio Grande** is, in a sense, one river cut and transformed into two -- a vigorous and unregulated snow-fed river in northern NM and a highly regulated river with substantial flow where it reaches the Gulf of Mexico. The dam was designed to retain all flow on the Rio Grande, releasing water only for irrigation purposes. As a result of this restricted flow, sediment loads, which normally are resuspended and transported downstream during high flows, have accumulated on the river bed and the channel has been invaded by tamarisk (a non-native, salt-tolerant bushy tree) for hundreds of miles below the dam. The channel has diminished in size since the dam was constructed and can no longer contain floods as large as it once could. As a consequence, relatively minor floods have caused significant damage to riverfront properties and structures downstream from the dam.
- The **Chattahoochee River** in GA is managed with recreation as a high priority, including boating and prize trout fishing. Lake Lanier above Buford Dam is the most heavily visited, federally managed lake in the country. Buford Dam is also used to meet peak-power demands of the Southeast hydroelectric power grid. The consequences of these patterns of frequent water release affect the safety of recreational users and have resulted in erosion of the river banks downstream.
- The channel of the **Platte River** in

WY, CO and NE has been narrowed to as little as 15% of its former width as a result of in-channel sediment accumulation in some stretches, caused by the placement of dams upstream. The numerous dams and reservoirs that provide flow regulation for irrigation have also depleted much of the Platte River's volume and significantly reduced the magnitude of spring floods. The riparian habitat, depended on by various species of cranes and other waterfowl, has also been severely restricted. Balancing the need for irrigation water for farmers upstream and for restoring wildfowl habitat downstream is one of the management challenges being faced. Adaptive management techniques have been suggested that would allow for moderate releases that could submerge sandbars that would otherwise host germination of unwanted vegetation. Under such a management strategy, planned releases could also open and maintain a channel adequate for use by waterfowl.

● The **Green River** in UT, WY and CO has had its channel profoundly altered and its water temperature affected by the construction and operation of Flaming Gorge Dam. Native fish were sufficiently threatened by these changes that the U.S. Fish and Wildlife Service invoked the Endangered Species Act to mandate dam releases deemed least likely to harm native fish. Dam operations have been modified in ways thought to be beneficial to the habitat of native fish. Collaborative work on the operation of Flaming Gorge Dam sets a precedent for a cooperative approach to minimizing the problems that exist below dams.

● The **Colorado River** is the very heart of the Grand Canyon in AZ. Glen Canyon Dam, which impounds Lake Powell, traps the vast quantity of sediment that once flowed through Grand Canyon. The clear, cold water that is discharged from the dam and the elimination of annual flooding have altered sediment transport and the biological communities along the Colorado River in Grand Canyon National Park. Glen Canyon Dam is authorized for flood control, recreation and hydroelectric power in addition to its water storage and distribution function. To balance these many mandates, studies that

provide scientific input into dam operation suggest the benefit of occasional, specifically designed high-flow releases – beach-building flows. Such a controlled flood was conducted in April 1996 downstream from the dam and was designed to resuspend and transport accumulated sediments at the bottom of the channel. In rebuilding sand bars and beaches along the river, this controlled flood experiment demonstrated that such engineered floods can have a beneficial effect and that dam management strategies can be developed to allow for such periodic events.

Written for a general audience, the USGS report also provides an extensive bibliography of available resources for a more technical investigation on the general topic and the specific river systems. Single copies of the report, published as USGS Circular 1126, "Dams and Rivers: Primer on the Downstream Effects of Dams," by Michael Collier, Robert H. Webb and John C. Schmidt, are available free of charge from the Branch of Information Services, U.S. Geological Survey, Box 25286, Denver Federal Center, Denver, CO 80225.

Grand Canyon Update

Almost one year after opening the Glen Canyon Dam's flood gates to help repair environmental damages caused by the dam's operations, federal officials began releasing large volumes of water into the Colorado River from Lake Powell in late February. Some scientists believe that this move could "wipe out" many of the beaches and backwater habitats restored by the man-made flood last March.

Bureau of Reclamation (BOR) officials estimate that heavy snows and runoff in the Rocky Mountains this year will be 171% of normal, sending 13.2 million acre-feet of water into Lake Powell. That amount could exceed the lake's capacity and overflow the dam unless large releases are begun soon. To protect the dam and make space for the extra runoff, BOR officials say they may have to allow water releases of 27,000 cfs throughout the spring and early summer.

Bob Winfree, senior scientist at the Grand Canyon National Park, fears the prolonged releases could harm young endangered fish like the humpback chub, flood habitat needed by the endangered willow flycatcher, and harm the endangered Kabab Ambersnail. Winfree said, "This is probably not the worst thing they could do, but it is definitely not the best".

Meanwhile, the *New York Times* reports that results of last year's artificial flood in the Grand Canyon are "decidedly mixed.". The March 1996 flood to restore beaches and wildlife habitat was hailed a month later by federal officials as a grand success. And, indeed, "the flood did build many new beaches, sand bars and backwaters. But the deluge was not strong enough to flush non-native species from the system, as had been hoped." "Experts" say that a natural flood, which would have been on



average twice as strong as the controlled one, "would have swept away the non-natives."

"Short of partly renovating the dam to allow it to pass more water safely, the full restorative effects of flooding cannot be exploited, some experts say." Still, "whatever its ecological outcome," the flooding experiment "is widely seen as a breakthrough" in the "arena" of politics and policy toward restoring rivers rather than strictly harnessing them for power production. Interior Secretary Bruce Babbitt said the Grand Canyon experiment "has enormous implications for river management all over the West" and that its lessons will be applied to other rivers.

Sources: The Washington Post (2/16/97); New York Times By Line Article by William Stevens, 2/25/97; and Greenwire Vol. 6, Nos. 194 and 199

Yellowstone Update

The Clinton Administration offered to give a Canadian mining company \$65 million on 3/12 in revenue from federal coal, oil and gas leases in MT if the company will drop plans to develop a "controversial" gold mine near Yellowstone National Park. The offer "is key to concluding a deal" between Toronto-based *Crown Butte Resources* and the feds. Despite Crown Butte's assurances that the mine would not affect the park, environmental interests were concerned that it could contaminate rivers and streams that flow through Yellowstone.

Under the Clinton Administration proposal, payments to Crown Butte would be spread over several years through 2002. Crown Butte has 30 days to review the offer; if it accepts, the deal would still have to be approved by company shareholders and the Congress.

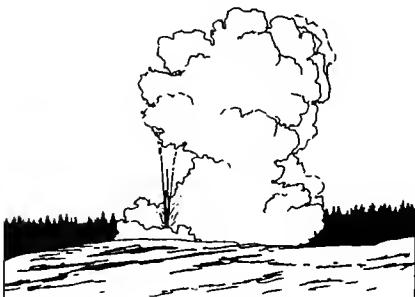
Larry Hamilton, director of the Bureau of Land Management for MT and the Dakotas said, "It's the simplest and most elegant solution in that it's just diverting federal royalties rather than entering into a land exchange or trading one environmental problem for another". Crown Butte Director of Investor Relations Les Van Dyke said, "I think it's a good proposal. We'll just have to look at it".

A joint press release issued by the *Greater Yellowstone Coalition*, the *Sierra Club Legal Defense Fund* and several regional environmental groups "strongly endorsed" the proposal. *American Rivers* President Rebecca Wodder congratulated both the Administration and Crown Butte and urged the Congress to prohibit future mining upstream from the park.

But MT officials were more skeptical. MT Governor Marc Racicot (R) declined comment on the specifics of the offer, but he had been trying to "keep the deal within MT" by studying state coal

or timber properties that could be developed and offered for exchange.

Sen. Craig Thomas (R/WY), chair of the Senate Subcommittee on Parks, Historic Preservation and Recreation, said he is "passionately committed to protecting" Yellowstone. But he warned that offering federal "cash for threatened development" could inspire



others to make such threats, and he said "a lot of questions" must be answered before Congress acts on the plan.

The Congress would have to figure out how to replace the \$65 million lost to the Treasury. The BLM's Hamilton "said one possibility" is to use money from the federal Conservation Reserve Program (CRP), which pays farmers to idle land for environmental purposes. But House Appropriations Committee Chair Robert Livingston (R/LA) criticized the offer saying, "These assets belong to American taxpayers, and it is the responsibility of Congress to see to it that dangerous precedents are not set in a mad rush to fulfill campaign promises"

Several "key" Republicans on 3/13 "reacted with fury" to the Clinton Administration's plan. *House Agriculture* Chair Bob Smith (R/OR), *Senate Agriculture Production and Price Competitiveness Subcommittee* Chair Pat Roberts (R/KS), and *House Agriculture Forestry, Conservation and Research Subcommittee* Chair Larry Combest (R/TX) objected to the purchase and the payment plan.

Roberts, in a letter to Agriculture Secretary Dan Glickman said "The effort to take the very limited funds for the (CRP) that we fought so hard to obtain in order to pay royalties to a mining company to fulfill a campaign promise (regardless of merit) is a non-starter."

But a USDA spokesperson said Glickman supported the "very difficult decision" to delay the CRP, and is "convinced" CRP goals will not be undermined.

Source: Greenwire Vol. 6, No. 211, 213

Religious Leaders Launch Environmental Campaign

A coalition of 25 senior religious leaders descended on Washington, D.C. in February to offer a pointed message to lawmakers of both political parties -- in essence, "God wants you to protect everyone's environment". Much has been made in recent years of the political power of the so-called religious right, most notably represented by the Christian Coalition. But increasingly other communities of faith have begun to flex their political muscle. This new coalition of notable religious leaders is getting involved in politics and linking a message of environmental stewardship with the need for social justice.

"It is hard enough to be poor in America, without bearing disproportionate burdens of poison and pollution," said The Very Rev. James Parks Morton, chair of the National Religious Partnership for the Environment (NRPE), through which the various religious faiths are joined. "As the State of the Union message is being delivered, major faith groups are sending senior leaders to Washington to call upon the Clinton Administration, Congress and environmental organizations to give greater priority to the needs of vulnerable people in programs to protect air, land, and water. The moral integrity of environmental protection is at stake here." Dr. Ismar Schorsch, chancellor of the Jewish Theological Seminary, put it more succinctly. "We are here today to lift our voices to stop the poisoning of the poor," he said.

The three-year \$4 million campaign will be facilitated by the NRPE which includes among its members the U.S. Catholic Conference, the National Council of Churches of Christ, the Coalition on the Environment and Jewish Life and the Evangelical Envi-

ronmental Network. Building on activities already underway, the campaign will include:

- the formation and strengthening of legislative action networks of 25,000 clergy and lay leaders;
- creation of 2,500 "covenant congregations" which will integrate environmental justice projects into ongoing church and synagogue activities; and
- the development of religious environmental education criteria for young people.

Members of the coalition have also been active on endangered species issues and some have helped lead opposition to "takings" bills in Congress and in their states.

Sources: Land Letter, Vol. 16, No. 7

Subsidies and the Environment

A study conducted by the *Dutch Institute for Research on Public Expenditure for the Earth Council* found that subsidies from the "public purse" in four sectors -- agriculture, water, energy and road transportation -- cost the world more than \$700 billion and harm the environment. The study, released on 3/12, concludes that policymakers are "addicted" to subsidies that discourage sustainable development and face "entrenched opposition" to change from "strong, vested" interests. Some subsidies include:

- \$335 billion in annual agriculture transfers;
- \$50 billion to \$100 billion on water irrigation worldwide;
- \$70 billion to \$80 billion a year on energy (specifically fossil fuels); and
- \$100 billion to \$215 billion a year on road transportation.

Source: Greenwire Vol. 6, No. 211

Coal Slurry Spill in SW VA Waterway

A massive coal slurry spill on 10/24/96 in rural southwestern VA, blackened miles of mountain streams and killed thousands of fish. It also threatened downstream drinking water supplies and the survival of rare fish and mussels. The spill occurred when a portion

of a holding pond near Pennington Gap, VA, collapsed into an adjacent abandoned mine shaft, spilling underground waste into the mine works.

The waste traveled underground for about a mile before surfacing through an air shaft. Until the hole was plugged 36 hrs. later, 3,000 gal. of waste/min. flowed almost directly into nearby Gin Creek. Contaminated water traveled through several creeks before entering the North Fork of the Powell River. Only a small amount of coal fines traveled to and were deposited in the Powell River itself.

The spill released an estimated 6.2 million gallons of slurry -- 4.2 million gallons of water and 2 million gallons of coal waste. The slurry, a mixture of slate, shale, and coal fragments (fines), also contained residues from chemicals such as sulfuric acid, aluminum hydroxylchloride, sodium chloride, and sodium sulfate, used to purify extracted coal.

Arch Mineral Corporation of St. Louis, the owner of *Lone Mountain Processing Company*, assumed full responsibility for the spill and cleanup efforts. VA Department of Mines, Minerals, and Energy (DMME) cited the operators with violations for the pond failure and the resulting pollution, and forced the company to halt operations pending investigations. Eventually, the company, which had been disciplined eight times in the past year for similar infractions, was fined \$15,000 under the VA Coal Surface Mining Reclamation Act. *Lone Mountain Processing Company* could end up paying more if they lose a lawsuit filed by the State Attorney General. State water law imposes a maximum civil penalty of \$25,000 for each violation of a permit condition-- the total number of violations in this case has not yet been established.

The spill severely degraded water quality, but did not impair the drinking water supply of Harrogate, TN, located on the Powell River 50 miles below the confluence of the North Fork of the Powell River. The spill's most damaging effect, however, was a massive fish kill. The VA Department of Environmental Quality estimates that 11,200 fish were killed

from exposure to the slurry, primarily in the 11-mile stretch of creeks directly downstream of the spill. By 11/26, there was no evidence of water discoloration and pockets of coal fines were found only in pool areas, primarily in the creek directly below the spill, according to Michael Abbott of the VA DMME.

The Powell River supports a number of threatened and endangered species including two fish species (slender club and the yellow fin madtom), and three mussels (Cumberlandian combshell, oyster mussel, and rough rabbit's foot). VA wildlife experts feared the effects of the spill on these species, but in an impact assessment submitted to the state on 11/15, *Lone Mountain Processing Company* said that the spill did not have observable impacts on these species.

Also on 11/15, *Lone Mountain* submitted a spill remediation plan to the state. The first step is the removal of coal fines from the streambed and streambanks, using both manual methods and vacuum trucks. Once the maximum possible amount of coal fines are removed, the company will estimate the amount of waste remaining in the streams (by comparing the waste released to the waste recovered). This determination will then be used to develop a deposition model that will estimate the spread of remaining material over time.

The remediation plan also includes the initiation of a long-term monitoring program to measure the health of the aquatic system and its recovery from the spill. In light of the Lone Mountain spill and a subsequent similar spill in November at the *Consolidation Coal Company*'s Buchanan No.1 facility, DMME, the Federal Mine Safety and Health Administration, the Office of Surface Mining and Reclamation Enforcement, and mine operators are reevaluating and inventorying all existing or proposed underground mine workings close to coal slurry impoundments.

DMME will also be requiring more information from permit applicants and permittees and will set up a geotechnical analysis of impoundments and adjacent areas to locate

old, unidentified underground mine workings.

Contact: Michael Abbott, VA DMME, Big Stone Gap, VA; (540) 523-8146; FAX (540) 523-8148; e-mail: mda@bsg1.mmel.state.va.us.

Source: Nonpoint Source News-Notes, Jan./Feb. 1997, Issue #47

Illinois River Recovery Proposal

After nearly four decades, of listening to the cries of Illinois River fishermen, waterfowl hunters and grass-roots conservationists, state officials are proposing action. "The bottom line is the Illinois River dies if we don't do something soon," said Illinois Lt. Gov. Bob Kustra in announcing 34 recommendations for reducing the siltation and pollution plaguing one of the state's greatest economic and recreational resources. "If we don't act now, the river will be too shallow to move barge traffic, water quality will continue to deteriorate, and people will no longer be able to use the river for boating, fishing, hunting or other purposes," he said.

Kustra, who headed a two-year study of the crisis by the 150-member *Illinois River Strategy Team*, announced the recommendations at a recent news conference in Peoria. The unfunded proposals call for cooperation between federal, state, local and volunteer organizations, and some of the proposals will undoubtedly meet with resistance from farmers and other private landowners. Kustra admitted that funding and implementing the recommendations will be a far greater challenge than studying the matter. Kustra said he is hopeful that the Illinois River watershed will qualify as a "national priority" area and be eligible for grants from the U.S. Fish and Wildlife Service.

"We have no estimates about what it is going to cost," Kustra noted. "We are led to believe . . . that there will be substantial sums of (federal) money available to those who can make the case for priority areas within their boundaries, and the Illinois River, which runs nearly the entire length of the state, is contained within its boundaries." The Illinois River's water-

shed encompasses 55 of the state's 102 counties and 90% of its population.

Eroded soil carried into the river from watershed tributaries has reduced the depths of river backwaters by more than 1 ft. over the last 8-10 yrs. The channel requires frequent dredging to clear the way for billions of dollars in barge traffic that includes grain, coal, oil, steel and other products vital to the state's economy. The plan to halt the river's decline includes proposals to:

- Increase tax incentive programs that pay landowners to reduce soil erosion and improve water quality;
- Create and restore wetlands to slow floodwaters and filter out sediment;
- Examine the possibility of temporarily lowering the river's level to dry out sediment and compact it;
- Appeal to local governments to adopt ordinances that would encourage property owners to reduce storm water runoff; and
- Reduce soil erosion from forest bluffs, woodlands, gullies, pastures and stream banks;

Since the late 1950s, those who live, work and play in the Illinois River Valley have been increasingly concerned about the rapid rate of siltation and loss of depth in the river and its lakes. In recent years, the problems have become so acute that many recreational boaters have been unable to navigate except in the River's heavily trafficked main channel. Commercial barge operators have become alarmed because in some areas the main channel is only 9.5 feet, deep less than required for their barges.

Although the recommendations are general and funding is up in the air, even hard-core river activists were cautiously hopeful that those with the power to do something about the river's decline might take action. "This is the first real beginning, but basically, much depends on what the people in agriculture do," said Peoria environmentalist Tom Edwards, who has been campaigning for action on the River's problems since the late 1960s. "Now, it has become a political issue and everybody wants to be for it; we'll have to see if they stick with it."

Another outspoken river advocate, Mike Platt, Executive Director of the *Heartland Water Resources Council* and a member of Kustra's strategy team, hailed the recommendations as "the most positive piece of hope I have seen." "Taking responsibility is the first step to solving any problem . . . It is up to us to make sure the ball doesn't get fumbled and to do as much as we can as fast as we can to save the river," Platt said.

On 2/12 Illinois asked the Agriculture Department to designate the Illinois River Basin as a *National Priority Area* and approve federal funds to aid in its cleanup and restoration. Gov. Jim Edgar (R) said his administration had earmarked \$2 million in matching funds over the next year to attract federal money to launch a 15-year river preservation program.

Illinois would pay almost \$100 million of the estimated \$513.7 million program if the plan is approved by the USDA. The state's proposal would ease flooding on some 175,000 acres of agricultural land, restore almost 93,000 acres of wetlands and prevent erosion along about 2,800 miles of streams.

Sources: Chicago Tribune, By-Line Articles by Wes Smith, 01/29/97 and Courtney Challos 2/13/97).

Miscellaneous River Issues

AL, GA, FL Rivers Compact - AL Gov. Fob James (R) and GA Gov. Zell Miller (D) on 2/25 signed legislation to begin negotiations on the use of rivers flowing through their states into FL. The GA legislature was the first to pass the bills setting up the negotiations; the AL legislature "followed suit" on 2/18. The FL legislature convened in late February. One of the new laws establishes a compact for FL, GA and AL to develop a water-use plan for the Apalachicola, Chattahoochee and Flint river basins. The other law sets up a process for GA and AL to develop a water-use plan for the Alabama, Coosa and Tallapoosa river basins. The governors are trying to establish water allocation plans by 12/98. One state could block an allocation plan. Sources: Associated

Press and *Tallahassee Democrat*
2/26/97

BLM Water Rights - The NV state Attorney General's (AG) office surprised Elko County, NV, officials by siding with ranchers over the federal Bureau of Land Management (BLM) in a water rights dispute. The AG's office upheld the constitutionality of a 1995 state law that essentially requires holders of stock watering rights to use those rights. Therefore, since the BLM doesn't own livestock, it isn't allowed to hold the rights and use them for conservation purposes, according to *Defenders of Wildlife* (DoW release, 2/18). Nevada state Sen. Dean Rhoads (R) said, "This has been a truly historical ruling and will send shock waves to the other western public land states and to Secretary of the Interior Bruce Babbitt's rangeland reform proposal". Source: Greenwire Vol. 6, No. 198

BLM Wetland Restoration Criticized - The Bureau of Land Management (BLM) has fallen "far short" of its goal of restoring 75% of its damaged river-vegetation areas by this year, having restored only about 40% of such agency lands nationwide. BLM figures ending in 9/96 show that of 800 river miles in AZ, 287 were in "proper functioning condition." The BLM's pace in restoring AZ wetlands has led to criticism from environmental interests and calls for a ban on cattle in riparian areas. But the BLM's Ron Hooper, the agency's only full-time riparian specialist in the state, says the BLM has been working with the *AZ Cattlemen's Association* and individual ranchers to reduce and better manage grazing. Meanwhile, a coalition of AZ environmental groups has called for the protection of 10 state wetlands areas under the little-known Ramsar Convention, an international treaty signed in 1971 that recognizes 846 swamps, marshes and rivers worldwide. Source: Greenwire Vol. 6, No. 190

Deerfield River Utility Deal - VT officials on 2/26 announced a deal with *New England Power Co.* to buy two hydroelectric projects along the Deerfield River and turn them into nature preserves. Besides selling its dam at Somerset Reservoir and its generating facility at the Searsburg Reservoir in southern VT, the utility

also agreed to protect 16,000 acres that it owns around the reservoirs. Under the deal, the state has the option of purchasing the dams and generating facility for \$8.39 million. Gov. Howard Dean (D) said the state would have to find outside sources of funding if it were to buy the dams. The VT Natural Resources Council hailed the agreement and dropped its challenge to relicensing the rest of the utility's Deerfield River facilities. The group said it will now focus on improving river flow and fish habitat in the river. Sources: By Line Article by Aaron Nathans, Associated Press and *Boston Globe*, 2/27/97.

Delaware River Restoration - As part of a deal to avoid building a \$2 billion cooling tower for its nuclear power plants on the Delaware River, NJ based Public Service Electric & Gas Co. (PSE&G) is working to restore some 20,000 acres of wetlands in "the largest privately funded wetlands mitigation project of its kind ever attempted in the U.S." In return for being allowed to continue operating its Salem nuclear reactors and their "massive" cooling pumps, PSE&G is restoring wetlands by replacing invasive phragmites reeds with a "more environmentally suitable" grass. The project stems from a 1990 state order directing PSE&G to comply with the U.S. Clean Water Act and maintain aquatic life along the Delaware River. The utility, which would have had to build a new cooling tower to comply, instead suggested the wetlands project, which should cost about \$1.9 billion less and "provide environmental benefits long after the reactors [are] shut down." "Despite environmentalists' protests" that Salem's cooling pumps kill "tons of tiny fish, fish eggs, plant life and microorganisms" in the river, the NJ Dept. of Environmental Protection (DEP) is working with PSE&G and will evaluate the utility's progress next year. The DEP will base a 1999 renewal of PSE&G's 5-year wetlands work permit on the evaluation. Source: Greenwire Vol. 6, No. 202

Lower Mississippi/Atchafalaya Pollution - An emergency rule issued by the LA Dept. of Environmental Quality (DEQ) allowing companies to continue discharging liquid oilfield wastes into

coastal waters could lead to "significant" violations of water standards, the USEPA says. Under state regulations adopted in 1991, companies had until the end of 1996 to stop the discharges. But DEQ Secretary Dale Givens extended the deadline by 120 days to give some small companies more time to comply. The USEPA contends that the DEQ did not get federal approval for the move, as it was required to do. Givens said he tried to get USEPA approval in advance, "but couldn't because of the Christmas holidays." Givens ordered companies to submit plans for halting the discharges as soon as possible, and said he will develop a final rule with approval from the USEPA. But companies were told "generally" they will have two more years to stop the discharges. Environment interests and fishermen have "fought" the discharges into parts of the Mississippi and Atchafalaya rivers and LA's coastal bays because the wastes are highly saline and may contain radioactive material from deep geological deposits. They say the discharges should be pumped back into underground sands. Source: Bob Anderson, *Baton Rouge Advocate*, 2/10/97.

MS/MO Rivers Confluence Park - A 4,600 acre parcel of land at the confluence of the Mississippi and Missouri rivers called Columbia Bottoms will be preserved as open space. In mid January, the City of St. Louis and the MO Department of Conservation struck a \$9.3 million deal, in which the State will purchase the land for an urban wildlife area. The City of St. Louis originally bought the land in the 1950's as a potential airport site. They have held onto it with the hope that it could be sold as industrial land. However, its location in the floodplain have precluded that use, and, for the past several years, the land has been leased out for farming and closed to the general public. While the sale must still be approved by the City Aldermen, area conservationists anticipate that it will go through. Numerous individuals and organizations in the St. Louis region and beyond have worked quietly behind the scenes to put pressure on the Governor, the Mayor, the City Comptroller and the City Aldermen to make this acquisition a reality. Now, St. Louis will

have an excellent new recreational area close to the City; now foreign visitors (who have heretofore traveled to the region to see the confluence of these two world-class rivers and have been baffled that they can't) can visit this awesome meeting point. This is a truly a momentous occasion! Source: *Mississippi River Basin Alliance*, 1997 Newsletter



Montana Rivers Suit - Five Montana environmental groups have filed suit in U.S. District Court in Missoula, MT, to force state and federal agencies to set a schedule for cleaning up "impaired" lakes and streams in the state. The *MT Environmental Information Center and the Alliance for the Wild Rockies* contend that MT's Dept. of Environmental Quality and the USEPA have violated the federal Clean Water Act by failing to clean up polluted waters or to set a timetable for doing so. The groups say the state identified more than 900 "impaired" lakes and streams in a 1996 survey, but has determined pollution levels and received USEPA approval of a cleanup plan for only one. In addition, none of the 29 stream segments listed as "high priority" have been addressed. Source: *Associated Press/Great Falls, MT Tribune*, 3/2/97.

Neuse River - The USEPA is pressuring NC officials to establish pollution limits for the Neuse River after an environmental group filed suit against the agency. The *Neuse River Foundation* filed the suit in U.S. District Court in Raleigh, NC, alleging the USEPA has failed to require the state to set and enforce "firm thresholds" in the river for nitrogen, a pollutant linked to "massive" fish kills and algae blooms. Mike McGhee, head of the USEPA's water division in the Atlanta regional office, has been negotiating with the various parties in an effort to avoid litigation. McGhee said, "We realize we are legally vulnerable in this area." Rick

Dove, who monitors the river for the New Bern-based foundation, said the group decided to file suit after state regulators "repeatedly refused" to add firm thresholds to its Neuse plan. Source: Greenwire Vol. 6, No. 192

Ohio Rivers - A coalition of eight environmental groups, led by *Rivers Unlimited*, have requested a temporary restraining order to bar the OH EPA (OEPA) from issuing permits under a new state water pollution law until a lawsuit filed by the groups in June 1996 is resolved. The law allows the OEPA to classify the state's 61,000 mi. of waterways into six categories based on their current water quality and potential for improvement, and then set limits on how much pollution can be discharged into the streams, with the higher quality waters receiving more protection. But environmental groups say the law violates the federal Clean Water Act (CWA). The OEPA has issued 28 permits for activities such as wetlands fill projects, sewage treatment plants, dredging in the Ohio River and break wall construction on Lake Erie since the law took effect on 10/1/96. The groups say they were not aware that the state was issuing permits until Jeff Skelding, Executive Director of *Rivers Unlimited*, spoke with OEPA officials in late January. On 3/3 Common Pleas Judge Beverly Pfeiffer in Franklin County, OH, ruled that the state's 5-month old water pollution law violates the federal CWA since it does not provide for enough public participation. The ruling struck down a controversial aspect of the law that permitted the state to allow more pollution into certain streams without public hearings. Environmentalists "cheered" the ruling, while state officials said it would affect a small number of permit holders and not alter the way they do their jobs. - Source: Greenwire Vol. 6, No. 196

Platte River (NE) - The *Platte River Whooping Crane Maintenance Trust* and the *National Audubon Society* have both pulled out of a three-state effort to develop an endangered species program on the Platte River. The talks were with CO, NE, WY, and the feds over projects -- such as relicensing the Kingsley Dam near Ogallala, NE. The dam must meet

endangered species requirements to gain new operating licenses. Paul Currier, Executive Director of the *Crane Trust*, said proposals from the states did not go far enough to protect wildlife and that the cooperative effort, which began in June 1994, had "become a major part of the problem, not a potential solution." Dave Sands, Executive Director of *Audubon Nebraska* and John Echeverria, attorney for *National Audubon Society* said the group is concerned that the discussions among NE, CO and WY officials -- now "approaching their third anniversary" -- are prolonging the 13-year effort to relicense the Kingsley Dam. New licenses could include conservation measures that provide a basis for basin-wide restoration efforts, Echeverria said. With relicensing "out of the way," the states could work on "other sticky issues," he said. The states in June 1994 signed an agreement brokered by Interior Secretary Bruce Babbitt to try to resolve species' habitat needs. Don Kraus, general manager of the *Central Nebraska Public Power and Irrigation District*, said he does not believe the discussions are delaying relicensing Sources: By Line Article by Julie Anderson, *Omaha World-Herald*, 3/3/97 and Greenwire Vol. 6, No. 193 and 260

Tennessee Rivers Fish Consumption - Under pressure from industry, the TN Dept. of Environment and Conservation (DEC) in late January dropped plans to warn the public about fish that might be tainted with dioxin in two east TN rivers. State officials had recommended the warnings after finding that average dioxin levels downstream from two pulp mills on the Hiwassee River and the South Fork of the Holston River were higher than 0.7 ppt, the level for health warnings set two years ago. But in a 1/22 letter to one of the mill's owners, the DEC's Paul Davis said the state would revert to a previous advisory level of 5 ppt. Citing "widespread scientific uncertainties" about dioxin exposure, Davis said the higher level is consistent with water quality standards approved by the state and the feds in 1991 and "does not represent a case of the state subordinating public health to industry demands". - Source: By Line Article by Tom

Charlier, *Memphis Commercial Appeal* 2/10/97

West Virginia Streams - The WV Division of Environmental Protection (DEP) Director Eli McCoy is "bucking" a proposed legal settlement that "could help clean up hundreds of polluted WV streams." In a 3/10 letter to USEPA Regional Administrator W. Michael McCabe, McCoy contended that the stipulations of the settlement, proposed by the USEPA and two environmental groups, could cost the DEP \$8.8 million or more. The settlement, proposed on 1/17, would require the DEP to establish tougher pollution limits, called total maximum daily loads (TMDLs), for the state's most polluted streams. Environmental interests in July 1995 sued the USEPA in federal court, alleging the federal agency had done nothing to require WV to publish lists of the most polluted waterways and establish TMDLs. But McCoy contended the DEP recently established a plan to put in place TMDLs for eight streams within the next five years. USEPA lawyer Bruce Byrd said the DEP had already signed an agreement to comply with the terms of the settlement, but the deal has not yet been approved by the court. Source: By Line Article by Ken Ward, *Charleston [WV] Gazette* (2/24/97).

WWF Prompts Sturgeon Conservation Efforts

A widely circulated *World Wildlife Fund* (WWF) study outlining threats to caviar-producing sturgeon recently prompted five Caspian Sea countries to agree to stop aggressive fishing for sturgeon. The report, published in November by TRAFFIC, WWF's wildlife trade monitoring program, detailed a rapid worldwide decline in sturgeon.

According to the study, *Sturgeons of the Caspian Sea and the International Trade in Caviar*, almost all of the world's caviar comes from the Caspian Sea and from three sturgeon species: Beluga or giant sturgeon, Russian sturgeon, and stellate sturgeon. The number of adult sturgeons living in the Caspian Sea is estimated to have declined from 142 million in 1978 to 43.5 million in 1994, mostly as a result of overfishing. Russia and Iran are the

main caviar suppliers, and, investigators believe illegal harvest may involve 90% of the total trade, valued at around \$125 million.

Days after the report's release, fishing industry leaders in Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan signed a protocol agreement that bans 1997 open-sea fishing for sturgeon in the Caspian. The five countries also agreed to carry out regular raids to catch poachers.

This closure will likely place increased pressure on the harvest of U.S. paddlefish resources. Readers will recall from the last issue of *River Crossings* Vol. 6, No. 1 that North American paddlefish eggs are being marketed in the Seattle area as a surrogate for sturgeon caviar at a retail price of \$89.95 for a 4 oz. jar.

Source: *FOCUS* (WWF Newsletter) Jan./Feb. 1997, Vol. 19, No. 1

Sturgeon Habitat Model

Tarandus Associates Ltd. (Brampton, Ontario) and *Ontario Hydro* (Toronto) are currently developing a Habitat Suitability Index (HSI) Model for lake sturgeon which could assist fisheries biologist with the management of this significant native species.

The model, which considers spawning habitat for adults as well as foraging/habitat requirements for both juvenile and adult lake sturgeon, was designed for application to large, slow-flowing rivers of north-central Ontario, although the model most likely has applications in other geographic locations. Development of the model was based on a thorough review of relevant North American literature, as well as extensive contact



Lake Sturgeon

with lake sturgeon experts and other fisheries specialists throughout Canada and the north-central U.S. The model received external peer review

by Canadian and American authorities. A computer model was also developed as part of this assignment for use with the U.S. Fish and Wildlife Service's HSI software.

The model is currently in an advanced draft form and is expected to be completed by early 1997. Limited "ground-truthing" of the spawning habitat variables was completed in the Spring of 1996.

Source: Sturgeon News, Nov. 1996
Contact: Chris Lowie, (716) 691-5456 or FAX (716) 691-6154

Deformed Frog Update

According to Gilman Veith, Associate Director for the USEPA's ecology division, "There are so many plausible explanations for what's being observed with frogs -- we need to first get a lot of data on what's happening".

In December, the *National Institute of Environmental Health Sciences* in Research Triangle Park, NC, sent a five-member team to St. Paul, MN for a briefing at the MN Pollution Control Agency (MPCA).

In addition to studying specimens collected last summer by the USEPA's Mid-Continent Ecology Lab in Duluth, the agency is setting up a reporting center that will begin analyzing the distribution and extent of deformed frogs nationwide. This spring, at least three of the agency's 10 regional offices will start field investigations where abnormal frogs have been reported. The agency also plans to begin monitoring amphibian and reptile populations in several national parks, Veith said.

Kathryn Converse, a wildlife disease specialist at the National Wildlife Health Center in Madison, WI said, "This is a real problem. There's a much higher incidence of deformities out there than you'd expect to naturally occur. It's not like we find 300 frogs and one of them has a bad leg."

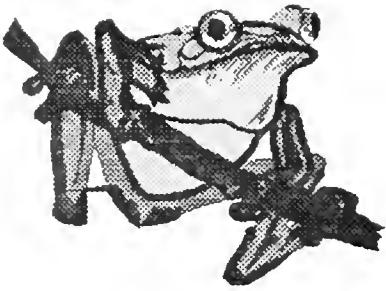
This Spring David Hoppe, a University of MN herpetologist, will attempt to breed three pairs of deformed northern leopard frogs presently hibernat-

ing in his laboratory. Hoppe wants to determine whether their limb deformities -- missing feet and club feet -- will be passed on to their offspring in a controlled environment. The deformities include missing or truncated legs, misshapen legs, extra legs, and missing or malformed eyes. Hoppe said he expects to apply for research funding from at least one of the agencies interested in the frog problem, but that his work will go forward regardless of government backing. Hoppe and his longtime colleague, Robert McKinnell, a cell biologist and cancer expert at the University of MN in St. Paul, were the first scientists to confirm the MN deformities.

McKinnell, who has worked on frogs for nearly 40 yrs., is studying internal abnormalities in MN frogs he collected last summer -- as well as in specimens he has obtained from an outbreak in VT's Lake Champlain. Along a 100-mile stretch of the eastern shore of Lake Champlain, researchers have confirmed a significant incidence of deformed leopard frogs. The VT frogs, said McKinnell, are showing deformities identical to those found in MN.

Richard Levey, an aquatic biologist with the VT Agency for Natural Resources, said the Lake Champlain deformities were especially striking. Historical records going back almost 80 yrs. reported only five previously known cases of frogs with deformed limbs in the state, he said. Last Oct. 9, Levey and another researcher visited four sites on the eastern shore of Lake Champlain and collected 230 leopard frogs and found 16.5% were deformed. Levey said he plans to revisit the same sites this spring and summer.

Jim Mumley, owner of the J.M. Hazen Frog Co. in Alburg, VT, has been supplying leopard frogs to researchers for 13 years. While he has occasionally seen frogs with missing limbs in the past, this year there were an unusually high number of deformed animals among the 40,000 frogs harvested by the company, he said. "I think there is something to it," Mumley said. "I really do. I just don't know what to make of it. It hasn't had an impact on us yet, but I expect in a year or two it might."



A team of Canadian scientists has linked probable exposure to pesticides with a large number of deformed frogs in the St. Lawrence River Valley. In the latest issue of the *Journal of Wildlife Diseases*, the researchers note that they found deformities in 106 out of 835 frogs collected from 14 farmland areas, while they found only two deformed frogs out of 271 taken from "pesticide-free" environments. Martin Ouellet, lead author of the study, said that he "strongly suspect[ed]" pesticides and that he has planned a more comprehensive study this spring.

Sources: The *Washington Post* By Line Article by William Souder, 1/29/97 and Greenwire Vol. 6, No. 196

Boat Wave Impacts on Plants

A completed laboratory study on how boat generated waves affect aquatic plants is now under review by the Corps of Engineers' (COE) *Navigation Environmental Coordination Committee*. The results indicate that waves generated by navigation traffic are capable of causing damage to plants (submersed macrophytes), but that the level of damage depends on the interaction of velocity, wave height, exposure time, plant morphology and plant size.

The study found that aquatic plants with highly branching form, like the European water milfoil, are most vulnerable to damage from boat generated waves. The damage is due primarily to entanglement and breakage, and it occurs at lower velocities when the plants are more upright in the water column. Aquatic plants with ribbon-like leaves, like water celery, are much less vulnerable to damage from waves and currents.

The findings are one piece of a larger study on the effects of navigation on plants. The study objective is to determine the extent to which navigation-induced hydraulic disturbances and sediment re-suspension affect the growth and distribution of submersed aquatic plant communities, and to predict the spatial extent and magnitude of the effects in the Upper Mississippi River - Illinois Waterway System.

The plant flume study involved a set of experiments conducted over the past year to determine the effects of waves and currents generated by navigation traffic. The experiments were conducted in a flume or large "bathtub" at the COE Waterways Experiment Station. The circulating water flume was equipped with a large pump to control current velocity and with a wave machine to generate waves of different heights. The flume has a large glass window on the side to allow observation of conditions within. Flats of aquatic plants were grown in a greenhouse and were carefully transferred to the flume, then subjected to a series of treatments of current velocities and waves.

Source: UMR-IWW System Navigation Study Newsletter, Jan. 1997, Vol. 4, No. 1

River Friendly Farmers

MN's *River Friendly Farmer Program* is giving public recognition to farmers who are doing their part to protect and enhance the state's rivers. The Program is sponsored by the *MN Alliance for Crop Residue Management* (MACRM), a coalition of government agencies, agricultural organizations and private firms whose purpose is to promote crop resources management practices that protect soil and water while maintaining the profitability of farming.

Program goals are to:

- Publicize and promote farming practices that benefit rivers in MN while maintaining river quality and farm profitability; and
- Inform non-farm publics about farmer positive contributions to the clean-up of MN's rivers.

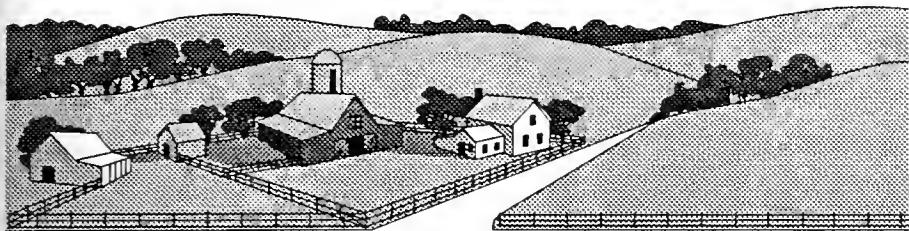
To accomplish these goals, the MACRM and contributing organizations have developed a farmer recognition program for any MN farmer who satisfies the 10 following criteria:

- All crop land has 30% surface residue coverage after planting, as a rotation average. (Alternatively, equivalent sediment control can be provided from measures such as contour farming, buffer strips, terraces, strip cropping, filter strips, hay in the crop rotation, field windbreaks, and seasonal crop residue management in wind erosion areas);

- Soil loss on highly erodible land (HEL) is at or below the tolerable soil loss level;
- Fertilizer application rates are based on soil testing, manure testing, realistic yield goals, and credits from previous legume crops and manure applications;
- Statewide and applicable regional best management practices (BMPs) for nitrogen, as recommended by the University of MN are observed;
- Phosphorus is banded below the surface or incorporated right after surface application;
- All feedlots in use are permitted by the MN Pollution Control Agency (MPCA), or in the process of being permitted, with manure storage adequate for current needs;
- Liquid manure is injected, or incorporated within 48 hrs. of surface application;
- Within 300 ft. of surface waters, drainage ditches, tile intakes, and other waters needing special protection, manure is applied in a manner that minimizes contamination according to MPCA guidelines;
- Pesticides are used together with cultural pest-control practices, at no higher than labeled rates, observing guidelines for water quality protection (atrazine setback distances, for example). Containers are stored, handled, and disposed of in accordance with state and federal law; and
- Overall, the farm is profitable/ productive as compared to surrounding farms in the region.

Designation as a *River Friendly Farmer* includes:

- public recognition through a variety of methods,
- issuance of a *River Friendly Farmer* certificate at a public ceremony,



- placement of a *River Friendly Farmer* sign on the farmer's property, and
- other publicity yet to be determined.

The *River-Friendly Farmer Program* solicits the help of farmers, members of various organizations, and concerned private citizens in nominating a farmer, getting a local organization involved, sponsoring activities such as tours and recognition ceremonies, or preparing publicity materials such as brochures, posters, and signs.

Contact: Tim Wagar, University of MN, University Center Rochester SE District Office, 863 30th Ave SE, Rochester MN 55904, (507) 280-2866, FAX (507) 280-2872 ; or Michael Price, Natural Resources Conservation Service, 375 Jackson St., Suite 600, St. Paul MN 55101, (612) 290-3677, FAX (612) 290-3375

Proposed Natural Resources Budgets for FY98

The FY98 Clinton Administration budget calls for roughly level funding for operations of most of the federal land management agencies. Overall, the Interior Department (DOI) budget request of \$7.5 billion represents a 6.6% increase over current funding.

As in recent years, the biggest winner is the EPA - a 12% increase. The National Park Service (NPS) would get a 5% boost to \$1.2 billion, including a 1% increase overall for each park. The Fish and Wildlife Service (FWS) would receive a \$33.8 million increase for wildlife refuges and endangered species funding. Land acquisition has never been a high priority for this administration, and the current budget calls for no significant changes in the program. Total land acquisition funding for FY98 is set at \$167.4 million.

Details of the FY98 proposed budget for selected natural resource programs at the four major land management agencies [Bureau of Land Management (BLM), FWS, Forest Service (FS), and NPS] follows. Selected funding is also listed for the Bureau of Reclamation (BOR), EPA, and the Agriculture Department's Natural Resources Conservation Service (NRCS) and the Farm Services Agency (FSA).

Land and Water Conservation Fund (\$000)

	FY96 Final	FY97 Estimate	FY98 Request
BLM	14,100	10,400	9,900
FWS	40,319	44,479	44,560
FS	41,000	42,000	42,000
NPS	<u>44,262</u>	<u>53,915</u>	<u>70,900</u>
Total	139,681	150,794	167,360

BLM (\$000)

	FY96 Final	FY97 Estimate	FY98 Request
Lands/Res. Mgt	566,537	572,164	587,495
Energy/Minerals	67,049	67,493	68,263
Range Mgt	49,902	52,059	54,342
Maintenance	30,051	32,754	36,097
Res Mgt Planning	8,486	6,000	6,292
Cultural Resources	10,982	12,014	13,122
Recreation	44,018	45,864	50,589
Wilderness Mgt	13,975	15,072	16,232
Recreation Resources	26,043	27,772	31,283
Soil/Water/Air	16,975	19,518	24,101
Wild Horses/Burros	14,821	15,866	18,740
Wildl/Fish Habitat	25,048	27,232	27,778
Land Acquisition	14,100	10,410	9,900

Acquisition Mgt	3,250	2,500	3,000
Range Improvements	9,252	9,113	7,510
OR/CA Grant Lands	132,295	100,515	101,406
Pymnts in Lieu of Taxes	113,500	113,500	101,500
Wildland Fire Mgt	<u>286,912</u>	<u>302,042</u>	<u>280,103</u>
Total	1,157,000	1,139,648	1,121,539

The president's FY98 budget proposes \$1.12 billion for the BLM, an effective increase of \$31.9 million, or nearly 3%, from current levels. Programmatic changes include an additional \$4.7 million to improve facilities and management of recreation sites and \$10 million for resource protection improvements. The administration proposes a \$28.1 million increase for the multi-bureau wildland fire program. These increases were funded in part through decreases of \$12 million in the Payments in Lieu of Taxes (PILT) account that provides payments to counties that have federal lands within their borders. The BLM manages 264 million acres of public land primarily in the West and AK while supervising mineral leasing on an additional 300 million acres of public land. Altogether these lands amount to 41% of all land owned by the federal government. The president's budget proposes no significant changes to the agency's grazing programs, in light of ongoing negotiations with Congress, western governors, livestock interests and environmentalists to reform the nation's grazing management laws. The bill would make no changes to the fee structure. Resource Advisory Councils, established in 1996 to balance multiple users demands are now firmly in place and expected to provide guidance on rangeland use in 1998, according to the DOI. Range management spending, much of it aimed at improving the health of the nation's rangelands, will receive a \$2.28 million hike. In one of its more controversial steps, the administration is proposing to levy a 5% royalty on hard rock minerals mined on federal lands. Reform



of the 1872 Mining Law, which designates fees and other mining procedures, has been stalled in Congress for years. A moratorium on the patenting of new mining claims, imposed with passage of the department's FY95 appropriations bill and reimposed each subsequent year, remains in effect. The BLM continues to play a significant role in implementing the president's forest plan. In total, the agency will fund forest plan implementation and "Jobs in the Woods" job opportunities for timber dependent communities at \$43.7 million, a \$1.1 million increase from FY97. The agency plans to redirect funding from planning and reforestation, where the need is no longer pressing, to other areas of forest plan implementation, including experimental techniques in adaptive management, surveying, species and habitat management, and refilling the timber pipeline. The Clinton Administration's request of \$9.9 million for land acquisition is based on "priority needs" and are not intended to reflect previous years' funding.

FWS (\$000)			
	FY96	FY97	FY98
	Final	Estimate	Request
Resource Mgt.	507,041	525,447	561,614
End. Species	60,297	67,385	78,781
Consultation	15,997	17,949	26,528
Listing	4,000	5,000	5,190
Prelisting (Cand Cons)	3,800	4,800	4,903
Recovery	36,500	39,636	42,160
Habitat Conserv	55,408	55,132	56,998
Env Contam	8,821	8,796	9,074
Fisheries	64,698	66,248	69,200
Refuge O/M	169,237	178,140	191,951
Law Enforcement	35,265	35,243	35,964
Migratory Bird Mgt	15,255	15,274	17,107
Construction	74,905	43,365	35,921
Natl Wildl Refuge Fund	10,779	10,779	10,000

Land Acquisition	40,319	44,479	44,560
Acquisition Mgt	7,500	8,500	8,860
N Am Wetl Cons Fund	6,750	9,750	15,000
Coop End Sp Fund	8,074	14,085	14,000
Wildl Cons/Apprec	<u>800</u>	<u>800</u>	<u>800</u>

Total	603,864	654,105	687,923
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The FWS's budget would increase \$33.8 million, or 8%, under the Clinton proposal. The request includes a three-tiered effort to address the highest needs of the National Wildlife Refuge system, including a \$13.8 million increase in operations spending. The budget includes a recreation fee demonstration program which will initially generate about \$1 million for on-the-ground project work at refuges that collect user fees. Thirdly, construction funding totaling \$22.2 million would be used for infrastructure backlog needs in refuges. The Clinton plan proposes \$78.8 million to support what it calls a "workable" endangered species program, including a requested program increase of \$10 million. The plan includes \$4.9 million for candidate conservation actions to support partnership efforts aimed at keeping species off the threatened and endangered lists. There are 292 such conservation actions planned for FY98. The listing program is funded at \$5.2 million to respond to petitions and respond to legal challenges. In FY98 the FWS anticipates that nearly 100 species will be proposed for listing and 120 species will be added to the list. The budget also includes \$42.1 million for recovery of listed species. An increase of \$5.2 million is proposed for the North American Wetlands Conservation Fund. The budget also includes a request of \$2.4 million for fisheries-related programs. The agency manages 92 million acres of public land, including 509 national wildlife refuges and 37 wetland management districts. The



agency's 7,845 person work-force would increase by 200 employees in FY98. The agency's land acquisition budget would stay flat. The administration requested \$44.5 million, which would fund priority acquisitions in 19 states.

BOR (\$000)

	FY96	FY97	FY98
	Final	Estimate	Request
Water/Related Resources	704,943	678,582	666,372
General Investigations	12,684	12,684	-
Construction	411,000	411,000	-
Operation and Maintenance	<u>273,076</u>	<u>273,076</u>	-
Total Agency	830,361	810,881	948,338

The FY98 budget reflects the BOR's evolving role in water resources management. As funding for traditional construction projects continues to drop; funds for efforts to improve water conservation projects is reduced; funds for efforts to improve water conservation, waste water reclamation/reuse and environmental restoration will be provided. A new account (Water and Related Resources) incorporates activities previously funded under Operation and Maintenance, Construction Programs, and General Investigations. BOR is the largest supplier and manager of water in the 17 Western states, delivering more than 30 million ac-ft. of water annually to 31 million people for agricultural, municipal, industrial and domestic uses. The agency is also the 5th largest producer of electric power in those states, generating nearly \$1 billion in annual power revenues. Total budget authority for the bureau in FY98 would be \$948.3 million, an increase of \$137 million from the FY97 enacted level. The president's budget request includes \$763.6 million for BOR's ongoing programs, a decrease of \$11.8 million.

FS (\$000)

	FY96	FY97	FY98
	Final	Estimate	Request
National Forest Sys	1,282,000	1,275,000	1,326,000
NW Forest Plan	96,000	107,000	107,000
Watershed Assessment	20,000	21,000	21,000

20,000	21,000	21,000
Sust. Timber Sales Prog		
21,000	22,000	22,000
Adaptive Mgt Areas		
8,000	8,000	8,000
Ecosystem Planning		
12,000	20,000	20,000
Research		
5,000	5,000	5,000
Ecosystem Restoration		
14,000	16,000	16,000
Rural Assistance		
16,000	15,000	15,000
Land Acquisition		
41,000	42,000	42,000
Recreation/Trails		
267,000	281,000	266,000
Forest/Rnglnd Research		
178,000	180,000	180,000
State/Private Forestry		
137,000	155,000	156,000
Emerg Pest Suppression		
17,000	0	0
Wildland Fire Mgt		
385,000	530,000	514,000
Presuppression		
295,000	319,000	303,000
Suppression		
90,000	211,000	211,000
Total Discretionary		
3,201,000	3,464,000	3,136,000

The FS can expect level funding under the president's budget proposal. The difference in agency totals from FY97 to FY98 reflects the elimination of \$300 million in emergency fire suppression funds. The cost of fire fighting has varied dramatically since



FY80 and has been inherently unpredictable. Firefighting has become more expensive in recent years, the agency says, because of the growth of urban areas into what were previously wild lands. Fires that might previously have been left to burn must now be fought vigorously to protect lives and property. Total federal funding for FY97 is \$408 million, a 6% increase over the FY97 estimate. In FY96, the volume of national forest timber sold was 3.4 billion board ft. (bbf) The current estimate is that 3.8 bbf will be offered for sale in FY98 compared to an estimated 4.2 bbf in FY97. The FS manages 191 million

acres of national forest and grasslands, provides assistance to state and private foresters while carrying out major forest research and working on international forestry issues. The FS in FY96 would receive \$42 million for land purchases in 24 project areas.

NPS (\$000)

	FY96 Final	FY97 Estimate	FY98 Request
Park System Oper	1,081,772	1,154,626	1,220,325
Resource Stewardship	171,359	193,310	211,158
Visitor Services	251,555	271,977	287,599
Maintenance	349,280	367,698	381,310
Park Support	220,675	228,967	241,815
Land Acquis (total)	44,262	53,915	70,900
NPS land acquisition	34,400	39,715	56,700
Acquisition Mgt	7,200	7,200	7,200
State LWCF Grants	0	0	0
State Admin Expense	1,500	1,500	1,000
Everglades Rest Fund	-	-	100,000
Construction	191,225	169,744	150,000
Nat'l Rec/Pres	37,579	37,976	42,063
Historic Pres Fund	36,212	36,612	45,612
Urban Park/Rec Fund	0	0	0
Total	1,403,764	1,571,490	1,789,373

With a budget comprising 21% of DOI spending, the NPS is once again the biggest winner among the four major land management agencies, but many environmental organizations warn that the 5% funding hike is still inadequate to address the agency's \$5.5 billion backlog in operations and maintenance needs. Under the Clinton plan, the agency would receive nearly \$1.8 billion in FY98, an



increase of \$217.9 million over the FY97 level, to help the parks accommodate the more than 270 million visitors expected next year and address ongoing maintenance needs. The largest portion of the requested increase in funding is in parks operation, where an increase of \$65.7 million is requested. This funding will enable the NPS to provide start-up operations at the five new parks established last year in the Omnibus Parks Act, including the Tallgrass National Prairie in KS. Construction is funded at \$150 million, which is \$19.7 million below current levels. Particular emphasis will be placed on rehabilitating existing facilities and correcting health and safety problems. The National Park System consists of 368 units covering 80 million acres. Visitation continues to grow, with more than 273 million visits recorded in FY95 and 279 million expected in FY96. The land acquisition program is funded at \$70.9 million for high priority areas. Of the total, \$21.8 billion is earmarked for the acquisition of the Elwha and Glines Canyon dams in Olympic National Park. The dams are to be purchased and destroyed to restore salmon runs. Additionally, the agency is requesting \$100 million through a new direct appropriation, the Everglades Restoration Fund, for land acquisition to restore the Everglades watershed. The funds would support accelerated acquisitions at Everglades National Park and Big Cypress National Preserve and provide assistance to the state of FL to acquire lands to restore the Everglades' natural hydrologic function. Congress declined to support this item last year, preferring instead to fund Everglades programs through the Farm Bill.

NRCS (\$000)

	FY96 Final	FY97 Estimate	FY98 Request
Conserv Oper	725,000	707,000	722,000
Watershed/Flood Prev	99,000	90,000	40,000
Resource Conserv/Dev	29,000	29,000	48,000
Forestry Incent Prog	6,000	6,000	6,000
CO River Salinity Cont	3,000	0	0
Cost-Shre/Easemnt Prog	222,000	343,000	427,000
Env Qual Incent Prog			

130,000	200,000	200,000	
Farmland Prot Prog			
15,000	2,000	18,000	
Conserv Farm Option			
0	2,000	15,000	
Wildl Hab Incentive Prog			
0	20,000	30,000	
Wetlands Reserve Prog			
<u>77,000</u>	<u>119,000</u>	<u>164,000</u>	
Total			
1,085,000	1,176,000	1,248,000	
FSA (\$000)			
	FY96	FY97	FY98
	Final	Estimate	Request
Conserv Prog			
1,832,000	1,892,000	1,926,000	
Env Qual Incent Prog			
-	200,000	200,000	
Conserv Reserve			
1,727,000	1,857,000	1,926,000	
Emerg Conserv Prog			
<u>30,000</u>	<u>25,000</u>	<u>0</u>	
Total			
17,840,000	18,458,000	20,603,000	

The NRCS is the result of a merger in FY94 of most of the conservation cost-share grant programs within the Agricultural Stabilization and Conservation Service and the Soil Conservation Service. The agency is responsible for program and policy direction, management and delivery of most of the department's conservation programs. Funding for the NRCS would increase \$72 million over FY97 levels to \$1.2 billion. The agency's conservation operations, which include technical assistance to farmers, soil surveys, and other programs would get a \$15 million boost in FY98. The Forestry Incentives Program, which provides cost-sharing for environmental benefits through tree planting on 111,273 acres, timber stand improvement on over 25,000 acres, and forestry site preparation on an estimated 1,970 acres, would receive level funding at \$6 million. The president's budget places a major emphasis on increasing wetland protection easements through the Wetlands Reserve Program, which would receive a \$45 million increase in FY98. The FY98 budget includes \$164 million to enroll 212,000 new acres of wetlands in the program. With that additional acreage, total enrollment at the end of FY98 will top 655,000 acres. The program calls for enrollment of 975,000 acres by the end of the year.

2000. The FSA administers most farm commodity and income support programs, including the Agricultural Conservation Program and the Conservation Reserve Program (CRP). The Clinton Administration's budget increases by \$69 million funding for the CRP, which provides annual rental payments to farmers who remove ecologically sensitive cropland from production. The FY98 budget projects a 36.4 million acre enrollment by 2002.

EPA (\$000)			
	FY96	FY97	FY98
	Final	Estimate	Request
Oper Prog			
2,800,000	3,109,148	3,402,037	
Sci/Tech (R&D)			
525,000	552,000	614,269	
Water Infrastructure			
1,700,000	2,236,000	2,078,000	
Superfund			
1,200,000	1,394,245	2,094,245	
Leaking Undergrnd Tanks			
45,327	59,423	71,210	
Total			
5,700,000	6,799,393	7,645,493	

Much maligned in the budget crises of the 104th Congress, the EPA has risen unscathed. In fact, the agency once again is slated to receive a major boost, \$846 million, in new spending. The bulk of that spending, \$736 million, will go toward the Clinton Administration initiatives to



expand Right-to-Know provisions about local pollution, cleaning up the worst toxic waste dumps by 2000, redeveloping urban brownfields, and toughening enforcement against criminal polluters. Spending on water quality programs would be \$274.9 million in FY98, essentially level funding. Much of that will be used for "common sense, place-based approaches to preserving water quality," with a continued focus on supporting local efforts to protect watersheds. The president's budget seeks \$5 million to support non-point source control efforts. Drinking water programs would get \$105.3 million under the president's plan, an increase of \$10.8

million over the FY97 enacted level, much of which will go toward implementing the provisions of the new Safe Drinking Water Act, which created nationwide safeguards for drinking water and establishes federal enforcement responsibility. Water infrastructure programs would decrease by \$158 million from current funding. Research and development spending, now called science and technology, would get \$614.3 million in FY98 an increase of \$62.3 million. Multimedia programs, representing the administration's attempt to address environmental problems on an ecosystem basis, would receive \$307.4 million, an increase of \$32 million. More than half of the agency's \$7.6 billion budget is transferred to state, local and tribal governments through various grant programs.

Source: Land Letter, Special Report, Vol. 16. No. 6

TU Lauds Clinton Budget

Trout Unlimited (TU) commended President Clinton on 2/6 for the many positive elements of his Administration's FY98 budget plan, but urged the Clinton Administration and Congress to focus on augmenting the Clinton budget proposal in several key areas:

Elwha River - Dam Removal and Fisheries Restoration - TU praised Clinton for proposing to fund the Elwha River dam removal and restoration project at \$25 million, but said that a major boost in funding (\$38 million) is badly needed to enable the National Park Service and other partners to move quickly to begin work on dam removal design and to complete acquisition of the dams. The dams have nearly eliminated the once robust runs of Elwha trout and salmon - ten different runs of an estimate 380,000 fish, including some of the largest Chinook salmon specimens ever recorded.

Forest Service (FS) Fisheries Conservation - TU said the Clinton proposals to boost the FS's Inland Fisheries Management program by \$2.5 million and Anadromous Fisheries Management program by \$1.5 million are positive steps, but considerably more funds are needed in each category to offset disproportionate cuts inflicted on these

and to do an adequate job of conserving the valuable fish resources that inhabit FS lands. TU pointed out that FS Lands contain about ½ of the trout and salmon habitat in the nation, including many critical remaining habitats for the many species of trout and salmon that are at a high risk of extinction in the western U.S. TU pointed out that fisheries on FS Lands yield an estimated \$2 billion annually, and said that instead of the proposed \$2.5 million and \$1.5 million, increases of \$10 million and \$5 million for inland and anadromous programs respectively are needed in FY98 to do a good job of managing fish on FS lands.

Key Fish and Wildlife Service (FWS) Fisheries Programs - TU supports the Clinton proposal to seek modest, new funds for three critical FWS programs and encouraged increased funding for the whirling disease program. The three newly funded programs include:

- \$1 million in new funds for aquatic nuisance species control to help boost the FWS' unheralded but important efforts to work with states to control invasive, environmentally destructive exotic species such as the zebra mussel;
- \$578,000 for Great Lakes Fisheries Restoration, including funds for coaster brook trout restoration, a program jointly supported and funded by TU, states and tribes in the region. FWS estimates that a restored coaster brook trout fishery could yield 20,000 angler days of recreation and \$1 million in angler expenditures annually; and
- \$750,000 for boosting FWS efforts to develop and include fisheries restoring conditions to dams up for relicensing under the Federal Power Act. Since licenses often are for 50 yrs., FWS has a once in a generation opportunity to work with utilities, FERC and conservation groups to enhance fisheries where dam licenses are being renewed over the next several years. Fisheries in OR, CA, MI and ME stand to gain much from this increase because of the large number of dams under review in these states.

Appalachian Clean Streams Initiative - According to TU the Office of Surface Mining's (OSM) *Appalachian Clean Streams Initiative* needs much more funding. Established in 1994 within the Abandoned Mine Land Program

the *Clean Streams Initiative* has sparked considerable action focused on restoring Appalachian streams damaged by acid mine drainage. It's a big job: OSM estimates 7,500 miles of streams are damaged by acid mine drainage in the region.

For The Sake of Salmon - TU strongly supports the Clinton proposal to provide \$2 million to the *For The Sake of Salmon* program for salmon watershed restoration through the National Resource and Conservation Service budget. These funds will yield up to 50 watershed councils in WA, OR and CA. The councils, constituted by state and federal resource agencies, tribes, industry and conservation groups, will develop and implement cooperative watershed-based restoration work to recover salmon in the region.

Contact: Peter Rafle, TU Director of Communications, (703) 284-9412

Streams Handbook/Video

The *Izaak Walton League of America* (Ikes) has released a "Save Our Streams Handbook for Wetlands Conservation and Sustainability" for use by citizens, planners, government agencies and businesses interested in taking a more active role in restoring wetlands. The 235 pg. book details the various features that are unique to wetlands and their importance, as well as offering options for monitoring and restoring wetlands and waterways.

The Ikes also released a new video entitled, "*Restoring America's Streams*". This new video is designed to help people learn how to stabilize eroding streambanks and restore degraded stream side forests. The 28 minute video is part of the League's *Stream Doctor Project*, which helps volunteers diagnose stream problems, write a prescription for recovery and institute a long-term care program. It is a companion to "*A Citizens Streambank Restoration Handbook*".

The book was produced with grants from the *Moriah Fund* and the *David and Lucille Packard Foundation*. To order the book (\$18) or video (\$20),

send checks made payable to: *Izaak Walton League of America*, Save Our Streams Program, 707 Conservation Lane, Gaithersburg, MD 20878-2983 or call 1-800-BUG-IWLA for an order form.

The Rivers Project

The Rivers Project located at Southern Illinois University at Edwardsville is accepting applications for two summer training programs on July 20-25, 1997 in Chicago or August 3-8, 1997 in Edwardsville. Participants will be interdisciplinarily trained in six curriculum areas that relate to river study - chemistry, biology, earth science, geography, mathematics, and language arts. This National Science Foundation (NSF) developed training will be conducted by experienced staff and Rivers curriculum writers, who are also past participants. Lodging, meals, and materials are available. Cost for the training is \$200 for the week. Graduate credits may also be earned.

A set of six curriculum guides have also been developed by *The River Project*, through an NSF grant to introduce water quality and river study into the nation's high schools. The six units are specifically designed to enable students to work together in learning about the environment and gain valuable hands-on experience while exploring on-going projects in their local communities. The six curriculum unit guides are for river chemistry, geography, earth science, mathematics, language arts, and biology. Direct inquiries to *The River Project* at (618) 692-2446, Southern Illinois University at Edwardsville, Box 2222, Edwardsville, IL 62026 or E-mail requests to rivers@siue.edu or <http://www.siue.edu/OSME/river>

Freshwater Fauna Posters

Full color 24" x 36" posters of America's nongame fishes, pearly mussels, and crayfishes depict the diversity and beauty of native species for the lay public, nature enthusiasts, and professional biologists. Each poster features original photographs by accomplished photographers of a sample (25-41 species) of each faunal group, showing

species) of each faunal group, showing the richness of colors, shapes, and varieties inherent in these seldom seen species. A brief narrative relates the value and plight of each group, and the need for conservation. To order, send \$5.00 (plus \$2.50 postage and handling) per poster to: Extension Distribution Center, 112 Landsdowne Street, Blacksburg, VA 24061-0512. Checks should be made payable to the Virginia Tech Treasurer. For bulk orders, call (540) 231-6192. All proceeds from poster sales will be used to reprint and distribute free posters to secondary schools throughout the U.S.

Green Thumb Video

Rutgers University Cooperative Extension Service has released a video entitled "A Greener Thumb: How to enhance your home lawn, landscape, and environment." The video provides how-to tips and techniques to customize a plan for an environmentally

friendly lawn and landscape.

The video discusses:

- the types of groundcovers that can be used to replace grass,
- what mulches can enhance landscape plants,
- when soil testing pays off,
- what fertilizer formulas are best,
- what "low-input" grasses can save money on fertilizers and pesticides,
- how to diagnose a lawn problem,
- what native plants attract beneficial wildlife,
- how compost improves the health of your soil and plants,
- how to reuse rain water and reduce water use, and
- when and when not to apply pesticides for two common lawn problems.

Based upon several years of educational outreach to homeowners the video provides a straightforward, flexible approach to minimize the use of fertilizers, pesticides, and water to improve the health of lawns and landscapes. Homeowners can pick

and choose what tips they want to implement since the "greener thumb" approach is flexible.



In addition, video purchasers receive a bonus "Greener Thumb Guide" of Extension fact sheets that explains the greener thumb

concepts in detail, a \$2.00 off coupon for a Cooperative Extension plant diagnosis, and a pocket-size directory of Extension agents and services to assist them with lawn and landscape-related questions.

Cost of the complete video package is \$19.95 plus \$3.00 for shipping and handling. Make checks payable to "Rutgers, The State University" at: A Greener Thumb, The Video; DEENR, ENRS Bldg.; PO Box 231; Cook College; New Brunswick, NJ 08903; ATT: Michael Olohan.

Meetings of Interest

June 1-6; Society of Wetland Scientists 18th Annual Meeting, MT State University, Bozeman, MT. Contact: SWS, P.O. Box 1897, Lawrence, KS 66044, (913) 843-1221, FAX (913) 843-1274.

June 3-4: Pathogens and Diseases of Fish in Aquatic Ecosystems: Implications in Fisheries Management, Portland, OR. Contact: Ray Brunson, Olympia Fish Health Center, U.S. Fish and Wildlife Service, 3704 Griffin Lane, Suite 101, Olympia, WA 98501, (360) 753-9046, FAX (360) 753-9403

June 3-5: Fisheries Management under Uncertainty - International Symposium, Bergen, Norway. Contact: Ann Gro Vea Salvanes, Dept. of Fisheries and Marine Biol., Univ. of Bergen, Bergen, Norway, Anne. Salvanes@ifm.uib.no.

June 6-9: Society for Conservation Biology 1997 Annual Meeting, University of Victoria, Victoria, B.C.,

Canada. Contact: Pat McGuire, Conference Management, Div. of Continuing Studies, University of Victoria, Box 3050, Victoria, BC, Canada V9W 3P5, (604) 721-8774, e-mail:SCB97@ uvcs.uvic.ca.

June 29-July 3: Annual Symposium of the American Water Resources Association and the Universities Council on Water Resources, Keystone Resort, Summit County, CO. Contact: AWRA, 950 Herndon Parkway, Suite 300, Herndon, VA 22070-5531, (703) 904-1228; or UCOWR, 4543 Faner Hall, Mailcode 4526, Southern Illinois University -Carbondale, Carbondale, IL 62901-4526, (618) 536-7571

July 10-13: 3^d Annual Mississippi River Conference, St. Louis, MO. This year's theme will be "Health of the River: Health of the People" Contact: Mississippi River Basin Alliance, Box 3878, St. Louis, MO 63122, (314) 822-4114, FAX (314) 821-4292.

July 14-15: Rocky Mountain Symposium on Environmental Issues in Oil and Gas Operations, Colorado School of Mines, Golden, CO. Contact: Ms. Sherri Thompson, U.S Bureau of Land Management, Lake-wood, CO 80215, (303) 239-3758, FAX (303) 239-3799.

July: III International Symposium on Sturgeon, ENEL Training Centre, Piacenza, Italy. Contact: Dr. P. Bronzi, ENEL spa - CRAM via Monfalcone, 15-20132 Milan (Italy) phone: + +39-2-72243412 or 3452, FAX: + +39-2-72243496, E-mail:bronzi@ram.enel.it.

August 18-20: Wild Trout VI, "Putting the Native Back in Wild Trout", Montana State Univ., Bozeman, MT. Contact: Robert Gresswell, U.S. Forest Service, Pacific Northwest Research Station, 3200 SW Jefferson Way, Corvallis OR 97456, (541) 750-7410, gresswer@ccmail.orst.edu

August 24-28: 127th Annual Meeting of the American Fisheries Society,

Monarey, CA. Contact: Paul Brouha, (302) 897-8617, Ext. 209.

Early November 1997: Ecological Restoration as a Key Element of Regional Conservation Strategies - 9th Annual Society for Ecological Resto

ration Conference , Ft. Lauderdale, FL. Contact: SER, 1207 Seminole Highway, Suite B, Madison, WI 53711, (608) 262-9547

May 23-28, 1998: First International Ictalurid Symposium - Catfish 2000,

Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180. (573) 751-4115, FAX (573) 526-4047.

Congressional Action Pertinent to the Mississippi River Basin

Agriculture

H.R. 246 (Peterson, D/MN) to restore the authority of the Agriculture Secretary to extend existing and expiring contracts under the **Conservation Reserve Program**.

H.R. 247 (Peterson, D/MN) to allow for a one-year extension on **Conservation Reserve Program** contracts expiring in 1997.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the **Food Security Act of 1985 and the Clean Water Act** to permit the unimpeded use of privately-owned crop range and pasture lands that have been used for the planting of crops or the grazing of corn in at least 5 of the preceding 10 years.

H.R. 861 (Moran, R/KS) authorizes a farmer or rancher whose bid for re-enrollment of land into the **Conservation Reserve** is rejected to unilaterally extend the contract for a final year.

Fish and Wildlife

S. 361 (Jeffords, R/VT) amends the **Endangered Species Act** to prohibit the sale, import, and export of products labeled as containing endangered species.

H.R. 374 (Young, R/AK) amends the **Sikes Act** to enhance fish and wildlife conservation and natural resources management programs.

H.R. 478 (Herger, R/CA) amends the **Endangered Species Act of 1973** to improve the ability of individuals and local, state and federal agencies to comply with that act in building, operating, maintaining or repairing flood control projects.

H.R. 752 (Chenoweth, R/ID) amends the **Endangered Species Act of 1973** to ensure that persons that suffer or are threatened with injury resulting from a violation of the act or a failure of the Interior Secretary to act in accordance with that act have standing to commence a civil suit on their behalf.

Flood Insurance

H.R. 230 (McCollum, R/FL) to ensure that insurance against the risk of **catastrophic natural disasters**, such as hurricanes, earthquakes, floods, and volcanic eruptions, is available and affordable, and to provide for expanded hazard mitigation and relief.

Forests

H.R. 101 (Baker, R/LA) amends the **National Forest Foundation Act** to extend and increase the matching funds authorization for the foundation, to provide additional administrative support to the foundation, to authorize the use of investment income, and to permit the foundation to license the use of **trademarks, trade names, and other such devices** to advertise that a person is an official sponsor or supporter of the Forest Service or the National Forest System

Government Affairs

S. 34 (Feingold, D/WI) to phase out federal funding of the **Tennessee Valley Authority**.

Grazing

H.R. 547 (Nadler, D/NY) requires the Interior and Agriculture secretaries to establish grazing fees at fair market value for **use of public grazing lands**.

Mining

S. 325 (Bumpers, D/AR) to repeal the percentage depletion allowance for certain **hardrock mines**.

S. 326 (Bumpers, D/AR) to provide for the reclamation of **abandoned hard-rock mines**.

S. 327 (Bumpers, D/AR) to ensure federal taxpayers receive a fair return for the extraction of **locatable minerals** on public domain lands.

Parks

S. 301 (McCain, R/AZ) and H.R. 682 (Kolbe, R/AZ) authorizes the Interior Secretary to set aside up to \$2 per person from **park entrance fees** or assess up to \$2 per person visiting the Grand Canyon or other national parks to secure bonds for capital improvements to the park.

H.R. 104 (Bartlett, R/MD) authorizes the **private ownership and use of National Park System lands**.

H.R. 302 (Skaggs, D/CO) a bill entitled the **"Rocky Mountain National Park Wilderness Act of 1997"**.

H.R. 901 (Young, R/AK) to preserve the sovereignty of the United States over public lands by requiring that **United Nations heritage designations** be subject to congressional approval.

Public Lands

H.R. 919 (Miller, D/CA) establishes **fair market value pricing** of federal natural assets, and for other purposes.

Refuges

H.R. 511 (Young, R/AK) to amend the **National Wildlife Refuge System Ad-**

ministration Act of 1966 to improve the management of the refuge system.

H.R. 512 (Young, R/AK) to prohibit the expenditure of funds from the Land and Water Conservation Fund to create new National Wildlife Refuges without specific authorization from Congress.

H.R. 952 (Miller, D/CA) to clarify the mission, purposes and authorized uses of the National Wildlife Refuge System and to establish requirements for administration and conservation planning of that system.

Takings

H.R. 95 (Solomon, R/NY) to ensure that federal agencies establish the appropriate procedures for assessing whether federal regulations might

result in the taking of private property, and to direct the Agriculture Secretary to report to the Congress with respect to such takings under programs of the Dept. of Agriculture.

Water and Wetlands

H.R. 128 (Crapo, R/ID) to preserve the authority of the states over waters within their boundaries, to delegate the authority of the Congress to the states to regulate water.

H.R. 227 (McCollum, R/FL) directs the Secretary of the Army to conduct a study of mitigation banks.

H.R. 238 (Robert Menendez D/NJ) to amend the Oil Pollution Act of 1990 to make the act more effective in preventing oil pollution in the nation's waters through enhanced prevention of, and improved response to, oil

spills, and to ensure that citizens and communities injured by oil spills are promptly and fully compensated, and for other purposes.

H.R. 550 (Oberstar, D/MN) amends the Clean Water Act to establish requirements and provide assistance to prevent nonpoint sources of water pollution, and for other purposes.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the Food Security Act of 1985 and the Clean Water Act to permit the unimpeded use of privately-owned crop range and pasture lands that have been used for the planting of crops or the grazing of corn in at least 5 of the preceding 10 years.

Sources: Land Letter, STATUS REPORT, Vol.16, No. 2, 5 and 8; and NOAA Legislative Informer, Jan. 1997, Issue #2



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River Crossings

Volume 6

May/June 1997

Number 3

MICRA's 7th Annual Meeting

The Seventh Annual Meeting of the *Mississippi Interstate Cooperative Resource Association* (MICRA) was held on May 5-6 at the Clarion Resort in Hot Springs, AR. Highlights include the following:

- MICRA's multi-state paddlefish tagging survey has now tagged and released over 400,000 hatchery fish and nearly 4,000 free-ranging wild adult fish. Of this amount 450+ tag recaptures have already been made.



paddlefish

- The U.S. Fish and Wildlife Service (FWS), Office of Scientific Authority has received an application for a 6-month permit to export 3 metric tons of paddlefish eggs to Japan. Biologists estimate that a 3 metric ton harvest would require nearly 1,000 female paddlefish, each providing about 7 pounds of eggs at approximately \$70 per pound (\$469,000). It is not uncommon for commercial fishermen to kill about 4-5 males for each female while searching for eggs. An egg shipment of this magnitude (3 metric tons) could thus significantly impact already fragile, but extremely important, paddlefish populations. MICRA thus submitted a formal request that the FWS take action to

establish a moratorium on the export of paddlefish eggs as caviar, until such time that a sustainable level of paddlefish harvest which is not detrimental to their populations can be determined. This will be possible through MICRA's *Basinwide Paddlefish Tagging Project*.

- Responsibility for maintenance of the basinwide paddlefish tagging survey was transferred from Tennessee Technological University, Cookeville to the FWS Marion, IL and Columbia, MO Fisheries Resources Offices. This transition will occur over the next year.

- A tagged, federally endangered, pallid sturgeon was found this spring by federal agents in an Illinois fish market. Because of the difficulty in distinguishing between the endangered pallid sturgeon and the shovelnose sturgeon

MICRA submitted a formal request to the FWS asking that:

- the FWS forensics lab develop a quick and easy, definitive test to distinguish between the flesh and eggs of pallid sturgeon, shovelnose sturgeon, lake sturgeon, and paddlefish;



"pallid sturgeon"

- FWS agents, in cooperation with state biologists and conservation agents, inspect fish markets and determine the impact of the caviar and fish flesh industry on the pallid sturgeon; and

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- the FWS enhance pallid sturgeon research efforts.
- A letter of support was provided for research on barriers to fish dispersal between the Great Lakes and waterways which connect it to the Mississippi River Basin.
- MICRA will hold a retreat in Stillwater, WI this summer to revisit and validate its Strategic Plan, pulling out 3 or 4 issues as focus areas.

American Heritage Rivers Initiative

The American Heritage Rivers Program is tentatively scheduled for public comment through a Federal Register Notice (FRN) in early June. This would be followed by a Presidential Announcement describing the updated initiative, based on comments received from the FRN announcement.

The USEPA is reportedly developing an initiative and nomination brochure. Such a brochure would be used by communities to recommend their river or river reach for nomination. It is hoped that the first designated river could be announced by the end of the summer, near labor day. A "rolling" designation process would then likely continue through the rest of the year rather than announcing all ten rivers at once.

The actual river selection process may be by a "blue ribbon" panel, but that decision has not yet been made. An alternative may be by participating agencies. Presently the USEPA and Corps of Engineers are responsible for design and printing of publicity materials and brochures. USEPA is in charge of developing information on grant programs, technical expertise, etc. that could be made available to communities that have a designated river. The Department of the Interior is in charge of training, while the U.S. Department of Agriculture is in charge of economic development. Application and scoring materials are under development.

Materials are reportedly scheduled to be available soon through the following web page: <http://www.epa.gov/owow/heritage/rivers.html>.

Death by a Thousand Cuts

"Death by a thousand cuts" was the way Rebbecca Wodder (American Rivers' President) described the fate of many of America's rivers at a news conference held at the National Press Club in Washington, D.C. on April 16. In their publ-



American Rivers

cation entitled, *North America's Most Endangered and Threatened Rivers of 1997*, American Rivers identified the follow problems:

- Diffuse polluted run-off from agricultural feed lots, development, streets,

yards, and farm fields persistently degrades water quality;

- Massive population growth in fragile areas depletes much-needed water from arid streams;
- Urban sprawl chews up precious riparian acres; dams dry up river beds and degrade aquatic habitat;
- Channelization straightjackets riverways; and
- Navigation, mining, logging, grazing, and irrigation-activities, all heavily subsidized by the American taxpay-ers, are undermining conservation efforts at the expense of the public trust.

Each year, American Rivers calls attention to the plight of North America's most endangered and threatened rivers with the release of its "*Most Endangered and Threatened Rivers Report*". The Missouri River; imperiled by navigation, extensive floodplain development, and major flood control reservoirs and levees;

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
(MICRA)
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Bettendorf, IA 52722-0774

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

tops this year's list. All rivers on the 1997 list suffer not so much from the threat of a single individual action, but rather from a complicated web of activities. These activities, though often less visible, are no less destructive. They pose a toxic mix that threatens food chains, natural energy and water cycles, aquatic habitat, and ultimately the people and communities that rely on their hometown rivers for drinking water, for recreation, and for economic stability. In essence, they threaten our rivers with "death by a thousand cuts".

American Rivers' 1997 Complete List of the 10 Most Endangered Rivers follows:

1. Missouri River (MT, ND, SD, NE, IA, KS, MO): To support navigation, the Army Corps of Engineers has waged a 50-year-long campaign to manage and control this once wild, dynamic waterway. As a result, the river has been dramatically altered: it has been shortened by almost 130 miles, and it is now one-third its original width. In addition, 98% of sandbars and islands are gone, and one-fifth of the river's native species are endangered. The end result of these efforts: a handful of barge operators now ship an infinitesimal amount of grain -- one tenth of one per cent of the grain grown in 4 of the states (MO, IA, KS, and NE) bordering the river.

2. Upper Hudson River (NY): The Upper Hudson River is believed to be the largest polychlorinated biphenyl (PCB) contamination site in the U.S., the source of which is General Electric Company (GE). PCBs are distributed over 190 miles of the Hudson River in river bottom sediments. New studies show that our 20 year policy of leaving the PCBs in place in the river has failed; PCBs are still being released into the environment, damaging the river, and threatening public health and safety.

3. White Salmon River (WA): Threatening one of the gems of the northwest is one dam, the Condit Dam built in 1913, which is the only barrier to migrating fish in the White Salmon. After a 50-year-long free ride, the dam owner still refuses to either install fish

passage or remove the dam. As a result, the White Salmon is known as the river with the "deadbeat dam."

4. San Joaquin River (CA): Despite record floods this year, commercial and residential development in the floodplains has resumed -- even on sites that were under water during the recent flooding. More than 58,000 homes are planned or under construction in flood-prone areas. Billions of tax dollars are being misspent on flood control projects while losses rise because of rapid urbanization in flood-prone areas. Flood losses from the 1997 flood, the costliest in CA's history, may top \$2 billion.

5. Wolf River (WI): The Wolf, one of the last wild riverways in the Midwest and a part of the National Wild and Scenic Rivers System, faces imminent and permanent ruin by a huge proposed zinc/copper mine. Often called one of WI's most beautiful rivers, the Wolf is threatened by an estimated 44 million tons of mine waste laced with mercury, lead, zinc, arsenic, and sulfuric acid.

6. Pinto Creek (AZ): Cambior, Inc., a Canadian mining company with a notorious environmental record, including the 1995 mining disaster in Guyana, is proposing to open a copper mine literally in the middle of Pinto Creek, one of the last intact stream systems left in the Sonoran desert.

7. Potomac River (WV, PA, MD, VA, DC): Held up as a river restoration success story, the Potomac faces two major threats: (1) the widespread expansion of industrialized poultry farms -- which support 95 million birds -- and cattle feedlots in the Potomac headwaters. This industry threatens local drinking water supplies and potentially the drinking water for the Washington, D.C. area; and (2) Chapman's Landing: a proposed residential and commercial development which would convert riparian forest into a sprawling city the size of Annapolis, the capital of MD.

8. Mill Creek (OH): The most endangered urban river in the country, Mill Creek is one of the best examples of death by a thousand cuts. It is threatened by run-off from toxic waste sites, city streets, and sewage overflow. The state of OH now wants to downgrade the formal status of the river, effec-

tively saying the river has no value and no restoration potential.

9. Lower Colorado River (AZ, NV, CA): The Lower Colorado is falling victim to the rush by southwest states to replenish depleted water supplies as population explodes and agricultural needs increase throughout the area. For the first time this year, demand for water will exceed the river's supply, stripping the fragile ecosystem of much of the water that sustains it. As surrounding states vie for the Colorado's waters, the needs of fish and other aquatic species are often ignored.

10. Tennessee River (TN, AL, MS, KY): Important watershed protection efforts of the Tennessee River will end if the Tennessee Valley Authority (TVA) succeeds in eliminating its environmental responsibilities so that it can compete in a new de-regulated electricity marketplace. These responsibilities have been part of the TVA's mandate since 1933.

American Rivers' 1997 list of the 20 Most Threatened Rivers (in alphabetical order):

1. **Animas River (CO, NM):** Animas La-Plata water project.
2. **Apalachicola River (FL):** dams, channelization to support uneconomic commercial navigation.
3. **Blackfoot River (MT):** proposed gold mine.
4. **Clearwater River (ID):** timber harvesting.
5. **Columbia River, Hanford Reach (WA):** agricultural development.
6. **Ipswich River (MA):** dams, dewatering, urban development, hazardous waste
7. **Minnesota River (MN):** agricultural run-off.
8. **Neuse River (NC):** agricultural run-off, urban development.
9. **New River (CA, Mexico):** industrial pollution.
10. **Pagan River (VA):** allegations of industrial discharge.
11. **Red River (OK):** water project.
12. **Red River of the North (SD, ND, MN, Canada):** water projects, agricultural development.
13. **Rough and Ready Creek (OR):** proposed mine.
14. **Russian River (CA):** dewatering,

development, urban and agricultural run-off.

15. **Snake River (ID):** dams and dewatering.

16. **St. Croix River (MN, WI):** suburban development, construction of environmentally destructive bridge.

17. **Taku River (British Columbia, AK):** proposed copper/gold mine.

18. **Virgin River (UT, AZ, NV):** water project.

19. **White River (IN):** urban development.

20. **Yazoo River and Big Sunflower River (MS):** water project

Source: North America's Most Endangered and Threatened Rivers of 1997, and American Rivers' News Release, 1025 Vermont Avenue, NW, Suite 720, Washington, D.C. 20005, (202) 547-6900; <http://www.amrivers.org/amrivers/>

America's Private Land - A Geography of Hope

Paul Johnson, native IA farmer and Chief of the USDA, Natural Resource Conservation Service (NRCS) offers a ray of hope to the future of this Nation's private lands management in his agency's new publication entitled, *"America's Private Land - A Geography of Hope"*. We have seen Mr. Johnson's essay reprinted elsewhere, but thought it worthy of reprinting again for our readers in this issue of *River Crossings*. Mr Johnson's statement follows:

"Author and historian Wallace Stegner once wrote that the preservation of our Nation's last tracts of wildlands represented a "geography of hope." Stegner was right, and thanks to him and others who pressed for passage of the Wilderness Act of 1964, we can enjoy a national system of wildlands. Yet today we understand that narrowly circumscribed areas of natural beauty and protected land alone cannot provide the quality of environment that people need and want. We must also recognize the needs of America's private land and private landowners for us to truly have a geography of hope..."

...hope that we can build economically and environmentally sustainable communities for ourselves

and for our children,

...hope that we and our children and their children will retain the opportunity to renew ourselves and our spirits among that which remains wild and free, and

...hope for so much of the life with which we share this Earth.

'As we approach the next millennium, we must rededicate our efforts to conserve the land. We still live in a beautiful, largely natural world, but that world is increasingly characterized by accelerated change. World population growth and our urge to live richly are exerting unprecedented pressures on our soil, air, water, and other natural resources. Without intending to do so, we continue to push nonhuman life into ever-smaller places. Today, we run the risk of those places eventually becoming mere islands on a domesticated landscape.

'If Stegner were with us today, he likely would agree: A land comprised of wilderness islands at one extreme and urban islands at the other, with vast food and fiber factories in between, does not constitute a geography of hope. But private land need not be devoted to a single-purpose enterprise. With a broader understanding of land and our place within the landscape, our Nation's farms, ranches, and private forest land can and do serve the multiple functions that we and all other life depend upon.

'The farm on which my wife, my children, and I have lived and worked for the past 23 years is one example of how private land can function. We are but one of the 2 million farms and ranches that comprise much of the private land in America. We produce traditional commodities for the market place: corn, soybeans, oats, hay, milk, beef, mutton and wool, Christmas trees, and hardwood sawlogs. Elsewhere across the country, the crops vary, but the concept does not. Commodities for the marketplace are what our Nation's farms, ranches, and other private enterprises are about.

'But private land is about much more than this. The foundation of our farm's productivity is our soil, a complex, living system that, although largely unrecognized as important in our national environmental policies, is in fact the basis of all life. If we farm our soil well, its productivity will be sustained by recycling what was once living into new life.

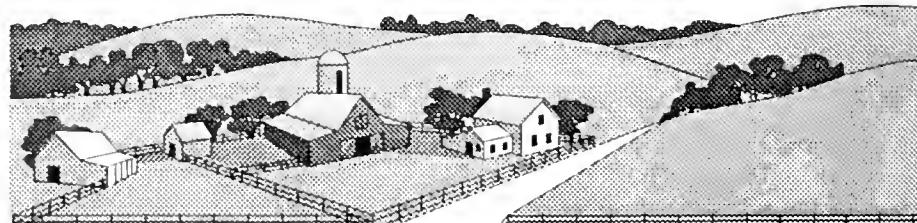
'Soil on our farm harbors a host of microorganisms that perform an array of functions that sustain life. They also buffer the multitude of foreign substances our industrial society releases into our environment. If we farm well, healthy soil will help to process those wastes, although agricultural land alone cannot possibly offset the need for less-polluting urban and industrial activities.

'Most water that we use falls first on our Nation's farms and ranches, where it is partitioned by soil into surface water, groundwater, and vapor that reenters the atmosphere through plants. If we manage our soil well, water will be used efficiently. By the time it leaves our farm, heading downstream to support our urban neighbors and other life, it will be clean.

'Soil on our farm is also a critical component of the carbon cycle. In this era of accelerated fossil fuel use, our soil, if farmed well, can sequester carbon, thus helping to stabilize global climate.

'Our farm, like all private land, is not only our home place but the home place of many plants and animals that inhabit this Earth with us. They are a part of creation and thus deserve our respect. If we farm well, we can continue to coexist with this rich array of life. Wilderness sanctuaries need not be the only home place for "noneconomic" species. Every farm and ranch and private woodlot in our Nation can and should be home to abundant wild life.

'Our farm, our neighbors' farms, and all other private land com-



prise a majority of the American landscape. As we use our land, we paint our individual and community portraits on the land. Done well, those portraits can be a source of pride.

'The story that follows is our attempt to present to you the state of America's private, nonurban land, but it is intended to be more than a national report card. We hope it prompts you to think about land in a different way.

'Private land in America produces abundant food and fiber. It does much more, however. Private land represents many rich, diverse places, full of life. Those places, when healthy, function in ways essential to the sustenance of all creatures on this Earth, including humankind.

'It should become obvious in reading this story that healthy, productive land does not simply happen. A good deal of thought, work, and conservation assistance--both technical and financial--are often requisite to success.

'America's farmers, ranchers, and woodlot owners work hard to produce multiple benefits from the land. If our Nation and those landowners are willing to partner together, we in the Natural Resources Conservation Service believe that America's private land, along with public land, can become our Nation's real geography of hope.'

The full "story" that Mr. Johnson refers to is available in *"America's Private Land - A Geography of Hope"* from your local NRCS office or by contacting the U.S. Dept. of Agriculture, NRCS, Washington, D.C. 20250, 1-800-245-6340.

Conservation Provisions of the 1996 Farm Bill

The 1996 Farm Bill created many new opportunities for improving watershed management, wetlands and riparian corridors. In general the bill's conservation provisions:

- simplified existing conservation programs;
- improved flexibility and efficiency;
- created new programs to address high priority environmental protection goals;
- authorized more than \$2.2 billion in

additional funding for conservation programs;

- extended the Conservation Reserve Program (CRP) and Wetland Reserve Program (WRP);
- created new initiatives to improve natural resources on America's private lands; and
- required farm operators to agree to abide by Conservation Compliance and Wetlands Conservation (Swampbuster) provisions in order to qualify for market transition payments under basic commodity programs which replace traditional farm subsidies.

Details of separate farm bill programs, obtained recently from the U.S. Department of Agriculture (USDA) follow:

Conservation Reserve Program (CRP) - The CRP protects highly erodible and environmentally sensitive lands with grass, trees, and other long-term cover and is extended through 2002. The 1996 CRP provisions further:

- Allow up to 36.4 million acres to be enrolled at any one time. New enrollments can replace expired or terminated contracts;
- Allow owners or operators who entered into a contract before 1995 to terminate contracts on certain acres after giving written notice. Contracts must have been in effect for at least five years. Lands with high environmental values are not eligible for early release; and
- Give the Secretary discretionary authority to offer future early outs for CRP acres.

Environmental Quality Incentives Program (EQIP) - This new program combines the functions of the *Agricultural Conservation Program, Water Quality Incentives Program, Great Plains Conservation Program, and the Colorado River Basin Salinity Control Program* and directs cost sharing and technical assistance to locally identified conservation priority areas. EQIP is funded at \$130 million in fiscal year 1996 and \$200 million annually thereafter. Livestock-related conservation practices receive 50% of program funding. The 1996 EQIP further:

- Establishes conservation priority areas where significant water, soil, and related natural resource problems exist, in cooperation with state and federal agencies and with the state technical com-

mittees;

- Gives higher priority to areas where state or local governments offer financial or technical assistance, or where agricultural improvements will help meet water quality objectives;
- Establishes 5-10 year contracts to provide technical assistance and pay up to 75% of the costs of conservation practices such as manure management systems, pest management, and erosion control;
- Defines land eligible for EQIP contracts as agricultural land that poses a serious problem to soil, water, or related resources;
- Does not allow large livestock operations (to be defined through a public rule-making process) to be eligible for cost-share assistance for animal waste management facilities, but they do remain eligible for technical assistance;
- Requires activities under the contract to be carried out according to a conservation plan;
- Limits total cost-share and incentive payments to any person to \$10,000 annually, and to \$50,000 for the life of the contract; and
- Phases in EQIP over six months, and then ends the *Agricultural Conservation Program, Colorado River Basin Salinity Control Program, Water Quality Incentives Program, and the Great Plains Conservation Program*.

Wetland Reserve Program (WRP) - The WRP is extended through 2002 and will have an enrollment cap of 975,000 acres. Program changes provide more flexibility and help landowners work toward a goal of no net loss of wetlands. The revised WRP:

- Requires that, beginning October 1, 1996, one-third of total program acres be enrolled in permanent easements, one-third in 30-year easements, and one-third in restoration only cost-share agreements. Individuals may choose the category for their eligible land;
- Stipulates that effective October 1, 1996, no new permanent easements may be enrolled until at least 75,000 acres of temporary easements have entered the program; and
- Provides landowners with 75-100% cost-sharing for permanent easements, 50-75% for 30-year easements, and 50-75% for restoration cost-share agreements. Cost-sharing

will help pay for restoration.

Wetland Conservation (Swampbuster)

- The 1996 farm bill makes several policy changes to existing Swampbuster provisions to give farmers more flexibility in complying with wetland conservation requirements while protecting natural resources. These policy changes:

- Expand areas where mitigation can be used, allowing individuals to work with producers, conservation districts or other relevant entities to select the best area for mitigating wetlands;
- Provide more options for mitigation, including restoration, enhancement, or creation as long as wetland functions and values are maintained;
- Encourage effective and timely use of "minimal effect" determinations, allowing the Natural Resources Conservation Service (NRCS, working with state technical committees, to identify practices that have a minimal effect on the environment and put them on a "fast track";
- Stipulate that wetland conversion activities, authorized by a permit issued under Section 404 of the Clean Water Act, which make agriculture production possible, will be accepted for farm bill purposes if they were adequately mitigated;
- Revise the concept of "abandonment" to ensure that as long as land is used for agriculture, a certified Prior Converted cropland designation remains in effect. When done under an approved plan, landowners with Farmed Wetlands (FW) and Farmed Wetlands Pasture (FWP) may allow an area to revert to wetland status, and convert it back to an FW or FWP for agricultural purposes without violating the Swampbuster provision;
- Require wetland determinations to be certified by NRCS. Previous wetland determinations will be certified to verify their accuracy. A certified wetland determination will remain in effect as long as the land is used for agricultural purposes or until the

owner or operator requests a review from the Secretary;

- Provide the Secretary with the discretion to waive penalties for ineligibility and to grant time to restore converted wetlands;
- Provide the Secretary with authority to identify for individual producers which programs are affected by Swampbuster violations and how much the penalty is; and
- Establish a pilot program for wetland mitigation banking in order to allow USDA to assess how well mitigation banking works for agriculture.

Wetlands Memorandum of Agreement (MOA) - The farm bill expands the definition of agricultural land contained in the interagency Wetlands MOA to include not only cropland and pasture land, but also tree farms, rangeland, native pasture land, and other land used for livestock production.

Conservation Research and Education - The farm bill creates the *National Natural Resources Conservation Foundation* as a charitable nonprofit corporation to fund research and educational activities relating to conservation on private lands. The foundation will promote innovative solutions to conservation problems through public-private partnerships. It will also accept private gifts of money or property to be used for conservation activities. Congress has authorized \$1 million annually from 1997 through 1999. The new foundation will offer grants for research, education, and demonstration projects. Grants will also assist conservation districts in building resources to carry out local conservation programs. The foundation will be administered by a nine-member board of trustees appointed by the Secretary.

Conservation Compliance - The farm bill's new policy changes in the operation of Conservation Compliance:

- Direct USDA employees who are providing on-site technical assistance to work with landowners to correct an observed potential compliance problem. Landowners will have up to one year to take corrective action before a violation is reported;
- Encourage farmers to maintain records

of residue measurement, including those provided by a third party. Where appropriate, USDA will use these measurements when conducting annual status reviews to determine erosion levels;

- Authorize county committees to provide relief in cases of undue economic hardship; and
- Revise "good faith" to ensure penalties are commensurate with violations.

NRCS Technical Guide - The farm bill requires public notice at the state level of future changes in the NRCS technical guide that affect Swampbuster and Conservation Compliance.

Conservation of Private Grazing Land

- The grazing lands provision is a new program to provide technical, educational, and related assistance to landowners on the nation's 642 million acres of private grazing lands. In fiscal year 1996, \$20 million is authorized. This amount increases to \$60 million by the third year.

Farmland Protection Program - The Farmland Protection Program is a new program under which the Secretary will join with state or local governments to purchase conservation easements. Based on voluntary participation, it only applies to land which farmers want to preserve in agriculture. The program:

- Protects between 170,000 and 340,000 acres of farmland;
- Authorizes up to \$35 million in total federal funding; and
- Requires land to be subject to a pending offer from a state or local farmland conservation program in order to participate.

Flood Risk Reduction - This program provides incentives to move farming operations off frequently flooded land by providing for a one lump sum payment to producers equal to 95% of the seven-year market transition payments, and other payments to offset estimated federal outlays on frequently flooded land. In return, the producer agrees to comply with applicable wetlands and highly erodible land requirements and to forego commodity loans, crop insurance, conservation program payments, and disas-



ter payments.

Wildlife Habitat Incentives Program (WHIP) - This new provision will help landowners improve wildlife habitat on private lands. The WHIP will have \$50 million in CRP funds for wildlife habitat improvement. WHIP:

- Provides cost-sharing to landowners for developing habitat for upland wildlife, wetland wildlife, endangered species, fisheries and other wildlife; and
- Provides for consulting with state technical committees to set priorities for cost-share measures and habitat development projects.

Emergency Watershed Protection Program Floodplain Easements - The farm bill authorizes the Secretary to purchase floodplain easements under the Emergency Watershed Protection Program.

State Technical Committees - State technical committees help develop technical standards for conservation programs. The farm bill requires public notice of meetings and expands committee membership to include representatives of nongovernment organizations such as agricultural producers, non-profit conservation organizations, agribusiness, and experts on the economic and environmental impacts of conservation techniques.

Conservation Farm Option - This is a pilot program for producers of wheat, feed grains, upland cotton, and rice who are eligible for Agriculture Market Transition Contracts. Under this program, landowners may consolidate their CRP, WRP, and EQIP payments into one annual payment. The participants enter into a 10-year contract and adopt a conservation farm plan approved by the Secretary. Initially, \$7.5 million is authorized, increasing to \$62.5 million in 2002. Total authorized funding is \$197.5 million.

Forestry Incentives Program (FIP) - This program, reauthorized until 2002, provides up to 65% cost share for tree planting, timber stand improvements, and related practices on nonindustrial private forest lands; with a limit of up to \$10,000/person/yr. FIP forest maintenance and reforestation provide numerous natural resource

benefits, including reduced wind and soil erosion and enhanced water quality and wildlife habitat as well as helping to assure a reliable future supply of timber. FIP is a nationwide program available to counties designated on the basis of a Forest Service survey of total eligible private timber acreage that is potentially suitable for production of timber products. Additionally, a landowner must:

- Own no more than 1,000 acres of eligible forest land, unless approved by the Secretary;
- Be a private landowner of a nonindustrial forest. Others may be eligible if they are not primarily engaged in the business of manufacturing forest products or providing public utility services;
- Have land that is suitable for conversion from nonforest land into forest land (afforestation); for reforestation; or for improved forest management; and
- Have land that is capable of producing marketable timber crops and meets minimum productivity standards established for FIP. At least 10 acres of eligible forest land is required for FIP.

Everglades - The farm bill supports ongoing efforts to protect the Everglades ecosystem. This provision authorizes \$200 million for restoration activities, including land acquisition. Authority is also provided to sell or exchange an additional \$100 million in federal land to help protect the Everglades..

Bypass Flows on Forest Service Lands - A task force will be appointed to study the issue of bypass flows and related water rights on national forest land. In the interim, there will be an 18-month moratorium on bypass flow requirements during the renewal of Forest Service permits for water supply facilities.

For Additional Information Contact:
Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, (202) 720-7327.

NRCS Buffer Strips

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), hopes to encourage farmers to convert marginal riverside lands into buffer strips. The NRCS's *National Conservation Buffer Initiative*, announced in April, promotes development

of narrow strips of trees and grasses along streams and rivers to slow water, trap sediments, and filter pollutants from farm runoff. Under this program the USDA hopes to install 2 million miles of buffer strips across the nation by 2002.

Conservation practices which serve as buffers include filter strips, streamside forest buffers, and other measures which trap fertilizers and pesticides, stabilize streambanks, and help reduce water temperature. Despite significant controls on pollution sources like factories and water treatment plants, many of our rivers and streams remain too polluted to support fishing and swimming. Runoff from farms and city streets is a leading source of pollution for many rivers.

"This initiative is an effort to use grasses and trees to protect and enhance all the resources on a farm. It's an attempt to help producers not only maintain their best land in crop production but also to make good use of marginal land," said USDA Secretary Dan Glickman. "Conservation buffers can be a key to maintaining a healthy, productive farm."

Although the NRCS will lead the multi year effort; other USDA agencies-including the Farm Service Agency, Cooperative Extension Service, and Forest Service; state conservation agencies, conservation districts, agribusinesses, and agricultural and environmental organizations will help implement the program, Glickman said.

Six national agricultural corporations have pledged nearly \$1 million over the next three years to complement the effort. The *National Corn Growers Association, National Council of Farmer Cooperatives*, and other groups are working with the corporations - *Cargill, ConAgra, Farmland Industries, Monsanto, Pioneer Hi-Bred International, and Terra Industries* - to help educate, encourage, and enable producers to install buffers.

Although buffer strips have been used in the past, resource managers are using new provisions of the 1996 Farm Bill to enroll more riverside lands

into federal easement programs. Several federal programs, including the CRP, WRP, WHIP, and the EQIP (See Previous Article), offer technical and financial help in establishing buffer strips. Buffers can also be used at strategic locations on nonagricultural landscapes, including urban areas, Glickman said.

Buffer strips are important to rivers and streams because they:

- help control polluted runoff from farms and city streets by holding and using nutrients and reducing sediment;
- provide recreation and scenic values;
- supply food, cover and water for a wide variety of animals and serve as migration routes for wildlife; and
- stabilize streambanks and reduce floodwater velocity, resulting in reduced downstream flood peaks.

Buffer types and their primary purposes include:

- **Contour buffer strips:** Strips of perennial vegetation alternated with wider cropland strips which are farmed on the contour. They can reduce sheet erosion and reduce movement of sediment, nutrients and pesticides.
- **Filter strips:** Strips of grass or other vegetation used to intercept or trap sediments, organics, pesticides and other pollutants before they reach a water body.



- **Riparian forest buffers:** Streamside vegetation consisting of trees, shrubs and grasses that can intercept pollutants from both surface and ground waters before they reach a stream.

• **Field borders:** Strips of perennial vegetation planted at the edge of a field. They can be used for a turn area or travel lanes for farm machinery.

• **Grassed waterways:** Strips of grass where water concentrates as it runs off a field. While they are used primarily to prevent gully erosion, waterways can be designed or combined with filter strips to help filter contaminants.

Buffer strips are most effective when used in combination with other conservation measures, including crop residue management and conservation tillage. For more information about the National Conservation Buffer Initiative, contact the NRCS at (202) 720-2791

Source: Mississippi Monitor, Vol. 1, No. 3, May 1997

Floods and Climate Change

In the April 27 issue of the *Minneapolis Star-Tribune*, Vice President Al Gore observed that recent flooding in the upper Midwest may be related to global warming. Gore said, "We cannot say with certainty that these events are caused by the onset of global climate change, but they are consistent with its predicted effects, and they should remind us all of the seriousness of the problem and the need to do something about it."

"Scientists around the world now overwhelmingly agree that humans are influencing the global climate ...largely by burning greater amounts of fossil fuels," Gore said. The effects could include rising sea levels, a higher number of heat-related deaths and diseases, and more severe floods, storms and droughts.

"As daunting as this challenge seems," Gore says, "we must commit ourselves to using energy more efficiently" and developing less polluting, renewable energy sources. And since the U.S. cannot solve the problem by itself, the Clinton administration seeks to negotiate international limits on greenhouse-gas emissions, "with the maximum amount of flexibility" provided for implementation.

"Based on these principles, we hope to forge an accord that addresses climate

change while providing for continued economic growth and maintaining U.S. competitiveness in the world." Global climate change "is a problem without immediate or easy solutions," Gore concluded. But based on record of success implementing other environmental laws, it is clear "we all have a job to do -- and this is a tremendous time to do it".

In the meantime, a "handful" of scientific skeptics "is winning the political debate" about global warming, according to journalist Ross Gelbspan, who has written a new book on the subject called *The Heat Is On*. Backed by "millions" in energy industry public-relations campaigns and by industry's allies in the Republican-led Congress, Gelbspan says doubters like Patrick Michaels of the *University of VA* and Richard Lindzen of *MIT* "have convinced the public that there is far more doubt about the theory of global warming than really exists." Perhaps what "frustrates" believers most is that the skeptics often make "sensational charges without subjecting their work to rigorous [peer] review."

However, the targets of Gelbspan's criticism "say his book is little more than an attempt to intimidate researchers who sincerely question the severity of global warming."

Some environmentalists say the U.S.'s "inaction" on global warming has "at least as much to do with the national passion for fossil fuels as the influence of a few scientific skeptics." The doubters' prominence may also reflect journalists' "tendency to accentuate extremes" to present a "balanced" story. Bud Ward, editor of *Environment Writer* newsletter writes: "In this area of journalism, balance is the enemy of accuracy."

A report by William Fraser of the *University of MT* estimated that higher average temperatures have caused 30-40% of one Antarctic island's penguins to migrate further inland, where it is cooler.

Spring is arriving an average of eight days earlier in northern climates than it was 10 years ago, according to a report by *Boston University*, published

in the April 17 edition of *Nature*. Based on satellite data, the report concluded that a warming trend and a "dramatic lengthening" of the annual growing season exists from Alaska to Siberia.

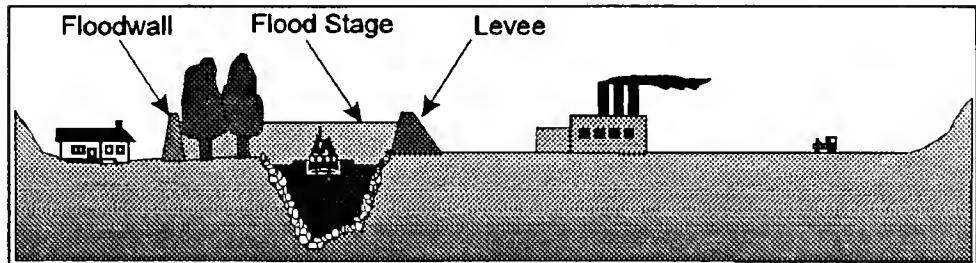
The cause is unknown, but the timing "is consistent with an enhanced greenhouse effect caused by the build-up of gases in the atmosphere," said the study, which marks the first direct observation of a change in the growth cycle of plants. The report's co-author, NASA's C.J. Tucker, "urged caution" in interpreting the finding that plants' carbon up-take increased 10% during the 10-year period. He suggested the outcome may be part of an "interannual trend" and not a result of human-induced activity. Lead report author Ranga Myneni said, "I don't think I'm ready to say that global warming is upon us". But Kevin Trenberth, of the *National Center for Atmospheric Research* in Boulder, CO, said the report corroborates other research that suggests a human-enhanced warming trend, which many scientists have linked to increasing pollution in the atmosphere.

Russian scientists said they have found two "vast" holes in the ozone layer above their country and warned people to restrict their exposure to the sun. Anatoly Yakovlev of Russia's meteorological office said one ozone hole stretched from northwest Russia to Belarus and Ukraine. The other covered the regions of Yakutsk and Krasnoyarsk in Siberia. Russian analysts believe the two holes stemmed from natural causes.

Sources: Greenwire Vol. 6, Nos. 213, 235 and 243

Longitudinal Changes in Mississippi River Floodplain Structure

Two of the most deleterious modifications to the Mississippi River have been (1) levee construction and (2) alignment and maintenance of the navigation channel. Altered hydrology and sedimentation patterns have progressed to the point that geomorphic processes have been severely dis-



Levees isolate rivers from their natural floodplains, preventing many freshwater organisms from gaining access to their natural feeding, breeding, and rearing areas, and thus from completing their life cycles. In this way populations of various species are destroyed and many species become threatened or endangered with extinction.

rupted. A growing body of evidence indicates that physical (geomorphic) processes and features control the biological structure and diversity of large floodplain rivers, particularly at large spatial scales.

Scientists generally agree that the ecological diversity and integrity of large floodplain rivers are maintained by fluvial dynamics (annual flood pulses and channel-forming floods) and river-floodplain connectivity. Anything that tends to suppress the natural flood regime or constrain channel migration will disrupt these interactive pathways and lead to reduced ecological diversity and integrity.

The Mississippi River's channel (including the upper, middle, lower, and deltaic plain segments) is fixed in place along roughly 80% of its length as a commercial navigation channel by a variety of channel training structures (wing dams, dikes, and revetments). Thus along 80% of the river's length its fluvial dynamics; once responsible for channel migration across the floodplain, for alternating terrestrial and aquatic phases

on the floodplain surface, and for sustaining a diverse array of aquatic habitat types and alluvial forest successional stages; have largely been arrested.

The table shown below displays total floodplain acreage and percentage of floodplain isolated from the main river channel by levees for six designated river segments. These data clearly show a progressive downstream isolation of floodplain land, with 90% of the total Mississippi River floodplain largely isolated from the main channel by levees. If the applied assumptions that geomorphic structure, fluvial dynamics, and river-floodplain connectivity largely control ecological diversity and integrity of large floodplain rivers are correct; then, given the current influences along the mainstem floodplain of the Mississippi River, future ecological conditions can be expected to deteriorate progressively downstream. To arrest these deteriorating ecological conditions, some level of physical remedial action, including habitat rehabilitation and enhancement, will be necessary and will

River Segment	Appox. Floodplain Acres (000s)	Floodplain Behind Levees
Headwaters	328	< 0.01%
Upper Mississippi (N)	496	3%
Upper Mississippi (S)	1,006	53%
Middle Mississippi	663	82%
Lower Mississippi	25,000	93%
Deltaic Plain	3,000	96%
TOTALS	30,493	90%

likely require sustained efforts.

Source: Delaney, R.L. and M.R. Craig. 1997. Longitudinal Changes in Mississippi River Floodplain Structure. Project Status Report, Upper Mississippi River, Long Term Resource Monitoring Program, USGS, EMTC, 575 Lester Avenue, Onalaska, WI 54650-8552, (608) 783-7550.

Lower Mississippi River Flooding

As noted in the previous article, the Lower Mississippi River (LMR) and the River's Deltaic Plain have been extensively leveed to protect both cities and farmlands. The area escaped disaster during the 1993 Midwest floods because the Ohio River was not in flood stage at the same time as the Upper Mississippi and Missouri. This year, however, heavy snowpack in the upper Midwest, coupled with heavy spring rains in the Ohio River valley had LMR flood control officials scrambling. If it hadn't been for cool temperatures and late Spring rains over the upper Midwest, LMR flooding could have made the Red River floods in ND and MN look like "preseason games".

Even so threats to some LMR dikes in the New Orleans area were significant enough to cause federal flood control officials to open the Bonnet Carre Spillway and flood Lake Pontchartrain. The Spillway and its accompanying dike normally isolate the Lake, lying just north of New Orleans, from the River's flows.

The effect of 31 days of Mississippi River flow into and through Lake Pontchartrain is now a concern of local residents and fishermen. Officials at the *Lake Pontchartrain Basin Foundation* said they aren't sure how the torrent of chemical - and metal-laden sediments will affect their hopes of allowing swimming again on the Lake's south shore by the year 2000. Neil Armingeon, the foundation's environmental director said, "It's going to be a year before fishing returns to the level it was. Right before it opened, fishing was fantastic. The impacts of the spillway will be seen in an overall decrease in water quality,

worse turbidity, and less clarity."

The flow of 3 trillion gallons of polluted river water into the Lake angered fishermen and environmentalists. Pete Gerica, president of the *Lake Pontchartrain Fisherman's Association*, which represents 100 commercial seafood harvesters, said he didn't need a crystal ball to forecast the spillway's effects. Mr. Gerica said blue crabs are emerging only halfway from their shells before dying from the pollutants, silt and cold temperatures. "The damage is done," he said. "They could have left it open as far as I'm concerned."



But Army Corps of Engineers officials said they were keeping their word in shutting the spillway as the Mississippi River falls. Deputy District Engineer Gordon Clark pronounced the spillway's operation a resounding success in preserving the levees around New Orleans by diverting the heavy river currents. River levels and flows reached their fourth-highest level this century. "We took a load off the levees by opening it," Mr. Clark said. "It was a tough call. But I would say we made the right decision."

Corps environmental officials said the spillway opening will have a dramatic, but short-term effect on the Lake. While acknowledging that the summer's brown shrimp season is devastated, they said the following years might produce bumper oyster crops because seed oyster populations proliferate during low-salinity periods.

Lake Pontchartrain is a large natural embayment of the Gulf of Mexico, and also an ancient distributary or channel of the Mississippi River. The Lake has long been isolated from the polluting effects of today's modern river channel, and residents tend to forget the Lake's close relationship with the River. The fact that the Mississippi River spilled into Lake Pontchartrain, even by way of a manmade spillway, shouldn't be

alarming unless you don't understand the history of the river, its geomorphology, and the way rivers work.

Over geologic history the river periodically changed its course back and forth across the entire Mississippi River Delta, creating and destroying channels, wetlands, and coastal marshes at will as it continually searched for the ever-changing path of least resistance to the Gulf of Mexico. The problem is that once again man has tried to confine the River within a designated channel. That channel normally directs the River past Lake Pontchartrain and New Orleans, far out onto the continental shelf, where it dumps its nutrient laden waters into the Gulf of Mexico. These nutrient laden waters are now contributing to a phenomenon known as *hypoxia*, or over-enrichment of Gulf of Mexico waters.

Like a prisoner, *Old Man River* would like to break out of its confining straightjacket and once again take a shorter route to the Gulf, enriching its marshes and estuaries as it goes. When this happens, and it eventually will, most certainly it will lay waste to human developments in its path and leave a trail of destruction in its wake. Most river scientists feel that it's just a matter of time until this occurs, and with predicted flooding on the rise, and 93-96% of the Mississippi River floodplain isolated behind levees that time may come sooner rather than later!

Source: Mississippi Monitor, May 1997

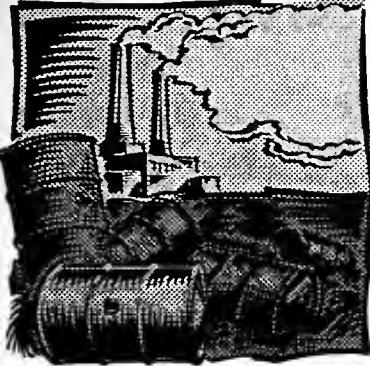
Miscellaneous River Issues

Alabama River: On April 8 the first Alabama Sturgeon was caught in the Alabama River. The fish will be used in a \$400k cooperative state-federal captive breeding program to recover the species. Source: Associated Press

Gila and Salt rivers: The USEPA will establish limits for mercury pollution on portions of the Gila and Salt rivers in AZ under a consent agreement filed in U.S. District Court. The *Arizona Center for Law* sued the agency,

saying it wasn't enforcing the federal Clean Water Act. Source: *USA Today*, April 22.

Lower Mississippi River: Rain showers in West Helena, AR, forced crews on May 9 to build a levee around the BPS chemical-packaging plant to prevent poisonous runoff from entering Mississippi River tributaries. An explosion at the plant on May 8 released noxious fumes of agricultural chemicals including azinphosmethyl, methomyl and



thiophanate, forcing more than 300 people from their homes and closing a nearby medical center. By the time the USEPA declared the air safe on May 9, nearly 30 people were treated for symptoms of chemical exposure. The federal Occupational Safety and Health Administration and the USEPA plan to conduct a joint investigation into the cause of the explosion. Source: Greenwire Vol. 7, No. 8

Mississippi River Delta: A spill on May 16 of an estimated 210,000 gallons of oil from a ruptured underground pipeline near Lake Barre in Louisiana impacted the area's sensitive marshlands and shrimp populations.

The oil from a Texaco pipeline created a seven-mile-long, two-mile-wide slick. Early reports indicated that more than 200 workers used containment booms to recover nearly 9,600 gallons of material. No cause has been determined. Source:



Greenwire Vol. 7, No. 14

Mississippi Delta Flood Control Damage: The U.S. is urging Paraguay's President Juan Carlos Wasmosy to limit the damage of a proposed waterway project that could seriously harm the world's largest wetland in Paraguay, Bolivia and Brazil. The State Department calls Wasmosy "the most ardent supporter" of the planned Hidrovia, a "massive" waterway project designed to give Paraguay and Bolivia sea access. The project would reroute the Paraguay and Panama rivers, which are key water sources for a 54,000-square-mile ecosystem. Timothy Wirth, Undersecretary of State, arranged for Wasmosy to visit south Florida and the Mississippi Delta in mid April to see the damage caused there by Corps of Engineers flood control projects. Wasmosy asked for technical assistance and said seeing the American experience would be "very valuable". Source: By Line Article by Thomas Lippman, *Washington Post*, April 22.

NC Streams: Governor Jim Hunt (D) on April 8 announced that he supports a two-year moratorium on new and expanding hog operations. Hunt "stopped short" of calling on counties to use their zoning authority to regulate hog operations. But he said a moratorium could help the state complete research that might help the counties in drawing zoning restrictions. State Rep. Richard Morgan (R), whose proposed legislation on hog regulations features the zoning provision, said the zoning is a "gotta do." Morgan said, "It's crucial to the bill to let local county commissioners make decisions in their own counties. It puts teeth in the bill." Deb Carter, an attorney with the *Southern Environmental Law Center*, agreed, saying the state should not "impose complicated technical standards" on zoning. Source By Line Article by Dennis Patterson, *Durham Herald-Sun*, April 9.

NC Wetlands: Beginning in May, NC developers and municipalities were given the opportunity to pay into a newly-created state wetlands bank designed to fund new or restored wetlands and compensate for acreage lost to construction, new highways and mining. Concern over the loss of wetlands to development prompted the state's Environmental Management

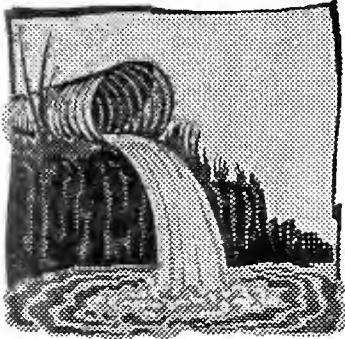
Commission to create a fee schedule for each acre of wetlands. Some bank critics "question the need for a formal program at all." But others said the bank is the "most practical compromise between government and private interests." NC's protection efforts follow those of some 20 other states that have either established or are developing versions of wetlands banks. Source: Greenwire Vol. 6, No. 240

Neosho River and Tributaries: MO's attorney general on May 5 filed a lawsuit against poultry processing company *Simmons Foods Inc.* charging the firm repeatedly polluted waterways that flow into OK's Grand Lake of the Cherokees. Simmons spokesperson Doug Siemens claimed the firm has been in compliance with environmental laws since July 1996 when it installed a new wastewater treatment facility at its Southwest City plant. Source: By Line Article by Chuck Plunkett, *Little Rock Arkansas Democrat-Gazette*, May 6.

PA Streams: A coalition of environmental groups and the USEPA have reached a settlement to identify and restore PA's polluted streams and rivers. Environmentalists in January 1996 sued the EPA for failing to implement key provision of the Clean Water Act (CWA) in PA. The CWA requires states to evaluate all their waterways and set pollution limits for those that exceeded clean-water standards. About one half of PA's waterways have not been assessed. Under the negotiated settlement, approved by U.S. District Judge Marvin Katz on April 9, the state Department of Environmental Protection and the EPA will work together to evaluate and restore the waterways over the next 12 years. Environmentalists have similar suits still pending against the EPA relating to waterways in NJ and DE. Source: By Line Article by Kristin Holmes, *Philadelphia Inquirer*, April 11.

Pigeon River: "For the first time," the USEPA will study the economic impacts of pollution from a NC paper mill on people who live along the Pigeon River in TN. Revised water-discharge permits for *Champion International's* Canton, NC plant,

approved by the EPA on December 12 1996, included a variance that allowed the mill to bypass state water quality standards for water color. But "Tennesseans have long complained that the EPA focused solely on the thousands of jobs provided North Carolinians by the mill, while ignoring



the harm done by the mill's effluents ... downstream." The state of TN, in January, sued the EPA to overturn the permit, prompting Vice President Al Gore to ask the EPA to conduct meetings with state officials to resolve the issue. In the meantime, three TN legislators are proposing that the state no longer buy paper products from *Champion International Corp.* until the firm's NC paper mill stops polluting the Pigeon River. Greenwire Vol. 6, Nos. 224 and 240

Platte River: WY Governor Jim Geringer (R) has "tentatively" endorsed a proposed cooperative agreement between his state, CO and NE that attempts to resolve a lengthy dispute over the protection of endangered species in the Platte River system. The proposed recovery plan would retain "enough" water in the central NE stretch of the Platte to maintain crucial habitat for endangered whooping cranes, least terns and piping plovers. In a May 9 letter to the U.S. Fish and Wildlife Service, Geringer said he believed the plan would remove the endangered species issue from an 11-year-old litigation between NE and WY concerning water use. Under the recovery plan, each state would increase the amount of stored water it sends to the central Platte, jointly adding an additional 130,000 acre-feet to the river. Geringer said he expected NE Gov. Ben Nelson (D) and CO Gov. Roy Romer (D) to also sign the agreement.

If they do, Geringer said, officials could begin environmental review of the recovery plan while the states continue to negotiate other water-flow issues. Source: *Associated Press/Billings Gazette* May 10.

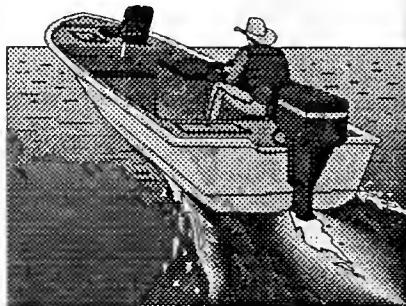
Russell Fork: The Army Corps of Engineers, in late April, defended the controversial Haysi Dam project in Dickenson County, VA, as the "best and least expensive" way to control floods on the Russell Fork, although it could wipe out 12 fish species along the river. Environmental interests have attacked the proposed \$117.6 million dam as a waste of taxpayer money, saying it would cost more than \$140,000 for every home protected by the project. Sources: Greenwire Vol. 7, Nos. 6 and 9

TX Streams: Aiming to reduce the impact of future droughts, the TX Senate on April 3 unanimously passed a bill that would create a "first-ever" water-conservation and drought-management plan. The bill, sponsored by state Senator J.E. Brown (R), calls for local planning for water needs, as well as conservation measures, water resource development and financial aid to communities. The bill would create a TX Water Trust to hold water rights dedicated to environmental needs. Brown said Texans would have faced "drastic" water rationing by 2010 without the plan. Ken Kramer, director of the *Sierra Club's* TX chapter, praised the measure but cautioned that public input is crucial when devising local conservation plans to ensure they don't "simply become wish lists" for economic interests. Last summer's drought cost the TX economy more than \$5 billion and resulted in 95% of the state's 254 counties receiving federal disaster relief. TX is one of only three Western states without a comprehensive water plan. Source: By Line Article by Kathy Walt, *Houston Chronicle*, April 4.

Outboard Motor Pollution

The San Francisco-based *Earth Island Institute* on March 25 filed a lawsuit against the USEPA, saying the agency's regulations on marine outboard motors allow manufacturers to use "inferior" technology that causes "excessive" hydrocarbon emissions. The group

claims that an estimated 14 million outboard motors and jet-skis are the nation's leading source of water pollution.



The institute also plans to file suit against 20 manufacturers who sell two-stroke motors in CA over alleged discharges of known carcinogens in violation of CA's Safe Drinking Water and Toxic Enforcement Act. Russell Long of *Ell's Bluewater Network* said, "These motors are the equivalent of 15 Exxon Valdez spills per year".

The EPA began regulating two-stroke motors in August 1996, requiring them to emit 75% fewer hydrocarbon and nitrogen-oxide emissions. But Long said that available technology would enable a 97% reduction.

Source: Greenwire Vol. 6, No. 220

Freshwater Eels Threatened ?

At one time, freshwater eels were common in the Upper Mississippi River (UMR) bordering MN, IA, WI and IL, and its tributaries. However, the population has declined during the last fifty years to the point where this fish is now rare or uncommon.

Catching an eel by hook and line is generally a matter of chance and usually occurs while the angler is fishing for something else. The same holds true for eels caught commercially in the UMR. During 1974 through 1980, commercial catch of eels in WI from the UMR ranged from 534-954 lbs., but in recent years the catch has been steadily dropping off for unknown reasons to the 1994 catch of 147 lbs. The eel is an exceptionally good food fish and is frequently regarded as a luxury food in other countries. Adult eels in the UMR commonly reach lengths of 3 ft.

and weights of 4 lbs.

Eels are "catadromous" in that they spawn in the ocean and return to freshwater to live as adults — just the opposite of the more familiar "anadromous" salmon that live as adults in the ocean and then return to freshwater to spawn. Eels are hatched in the Sargasso Sea between Bermuda and the Bahamas.



"freshwater eel"

The young eels migrate to freshwater rivers and arrive off our coastal waters about a year after hatching. Only the females journey up the Mississippi River and its tributaries, while the males remain near the mouth of the Mississippi River where it empties into the Gulf of Mexico.

In order to reach the WI portion of the UMR, eels have to get past at least 15 locks and dams - dams that limit the movement of other free-ranging fish such as the skipjack herring and paddlefish. To accomplish this feat the small eels, about 2.5-3.5" long at this point, migrate upstream at night. They get past the dams by climbing and crawling up the sides of the dam."

Young eels also have to get around the swift-moving parts of streams that empty into the Mississippi River, leaving the water by clinging to the wet grass or to the surface of the wet rocks, the eels move over land until they have passed the swift section and then re-enter the water to continue their upstream migration. Sometimes they travel over flooded or even dew-wet fields and turn up eventually in a pond or lake with no apparent river access.

For additional information on the status of eels in WI Contact: Ruth Nissen, WI Department of Natural Resources, P.O. Box 7291, Madison, WI 57307, (608) 268-2621.

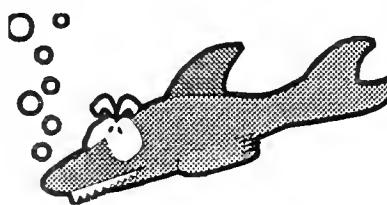
Source: Mississippi Monitor, May 1997

Hormone Disrupters May Affected Fish

In the broadest study of its kind to date, the USGS has found that pollution may be disrupting the sex hormones of fish in many streams across the country. Under the study, released on April 28, scientists analyzed about 600 carp from 25 streams in 13 states and the District of Columbia. The selected streams contained varying degrees and types of contaminants. Although some of the variations in hormones "probably resulted from natural variability," the data suggested some of the differences were caused by contaminants.

USGS Director Gordon Eaton said, "The finding of a correlation between hormone levels and contaminant levels in fish from such diverse locations is both a cause for concern and a call for further investigation." It is not yet possible to pinpoint which specific contaminants or factors may be related to the atypical hormone levels. However, the types of pollutants that were "significantly correlated" with hormone disruption were pesticides in water, phenol compounds in sediment and organochlorine compounds in biological tissue.

The study, a collaborative effort between the Biological Resources Division of the USGS and experts at the University of Florida, did not assess whether the hormone changes have negatively affected the fish.



Meanwhile, the USEPA in March "called for stepped up" research into whether synthetic chemicals disrupt hormonal systems in humans. "Although no conclusive evidence of a link has emerged," an agency report said that the chemicals have been shown to interfere with hormonal activities in animals and therefore pose a potential risk to humans. The EPA plans to award a series of research grants later this year, and has asked the National Academy of Sciences to review the scientific literature on the subject.

Debate over hormone disrupters hit a fevered pitch a year ago with the release of *"Our Stolen Future"*, which argued that industrial chemicals may already be affecting human health. The book by Theo Colburn, Diane Dumanoski, and John Peterson Myers provoked a vigorous defense by the chemical industry, which contended that evidence of health effects was far from certain.

Source: Greenwire Vol. 6, No. 212 and 244

Watchdog Satellites

Commercial imaging satellites being launched this year could provide pictorial images of environmental damages such as oil spills or deforestation "to anyone with a credit card and access to the Internet."

Consumers will be able to download pictures on their computers 90 minutes after the satellite collects them, according to Douglas Gerull, president of CO-based EarthWatch Inc., which plans to put the first of two one-meter-resolution commercial satellites in orbit this summer. The new breed of satellites will create higher-resolution pictures that cost hundreds instead of the thousands they currently cost.

Access to this technology will give environmental interests and other "armchair watchdogs" unprecedented ability to monitor governments and corporations. In British Columbia, the Sierra Club has turned six-years' worth of satellite images of coastal forests into "a public relations success." The group will use the pictures -- showing the depletion of old-growth trees -- in an international campaign to counter loggers' claims that enough land already has been reserved for conservation.

But some predict that oil and mining firms will also use the pictures to "push into ever-more remote corners of the globe to ferret out pockets of remaining natural resources".

Source: By Line Article by Mark Clayton, *Christian Science Monitor*, May 7.

Nature's Economic Value Estimated at \$30 Trillion

The earth's natural ecosystems generate trillions of dollars in goods and services each year - perhaps more than the combined gross national product of all the world's economies, yet these natural assets remain grossly undervalued and often unaccounted for in traditional markets. As a result, many critical environmental values necessary for economic prosperity and societal health are being severely diminished.

That is the conclusion of 32 prominent scientists and scholars who contributed to a new book *Nature's Services Societal Dependence on Natural Ecosystems*. The book is the first systematic attempt to quantify the importance of environmental protection using the tools of economic-utility assessment and cost benefit analysis.

Many of nature's interrelated and highly complex large scale biochemical systems could never be replicated by even the costliest human technologies, the book maintains. Thus attempts to quantify the true value of nature's services stretch the limits of science and economics.

"Preliminary estimates put the aggregate value of these services at or above the total GNP of the planet, on the order of \$30 trillion, said Economist Geoffrey Heal of *Columbia University*. To cite just one example, he notes that New York City would have to spend \$4 billion to build chemical treatment facilities if it did not benefit from relatively clean water from the Catskill Mountains. The value of over-the-counter medicines containing plant extracts is estimated at \$84 billion annually, and scientists estimate undiscovered medicinal plants in the tropical forests are valued at \$147 billion. The ecotourism potential of nature is estimated at nearly \$500 billion.

The range of services provided by nature include the:

- detoxification and preservation of breathable air, potable water, and arable soil;
- global and regional climate stabilization;

- pollination, pest control, and disease resistance of plants;
- soil fertility enrichment;
- production of products ranging from seafood and forage to timber, fuels, fibers and pharmaceuticals; and
- preservation of genetic biodiversity.

In essence, the authors maintain, nature effectively subsidizes all economic activity on the planet. The value of such services are often not recognized or calculated until they are in decline - whether by toxic air pollution, soil erosion, acidification of streams, or overfishing.

"Ecosystem services are absolutely essential to civilization; they are priceless," said *Stanford University* ecologist Gretchen Daily. "Yet their lack of price (i.e. they are typically not traded in economic markets) has contributed to a widespread lack of awareness of their very existence, and to a corresponding misimpression that the ecosystems that supply them lack value." "The idea," according to Daily, is to "assess what



we know about the tangible value of environmental resources," and to create revenue-producing institutions that make it profitable to invest in such resources. Daily argues that since technology is usually an expensive substitute for natural systems like wetlands which filter water pollutants, "it usually pays to protect (or enhance) natural systems, even if one ignores their intangible benefits."

Columbia University economists Graciela Chichilnisky and Geoffrey Heal "would take the general approach a step further" by allowing private companies to invest in conservation and sell the resulting services. Some "obvious candidates" for such efforts include flood control, conservation of marine fisheries, carbon sequestration in trees and

species diversity. According to Heal "If *Enron* can compete with the oil regulated utilities in energy sales, why couldn't they sell watershed services?"

Meanwhile, MIT economics professor Paul Krugman writes in a recent issue of the online magazine *SLATE* that the February 1997 endorsement by 2,500 economists of a statement calling for "serious measures" to limit greenhouse gas emissions served as "an impressive demonstration of a little-known fact: **Many economists are also enthusiastic environmentalists.**" Krugman, says that his "unscientific impression" is that "economists are on average more pro-environment than other people of similar incomes and backgrounds" since standard economic theory "automatically predisposes those who believe in it to favor strong environmental protection."

Due to their desire to make markets take environmental costs such as pollution and traffic congestion into account, "economists who actually believe the things they teach generally support a much more aggressive program of environmental protection than the one we actually have," Krugman writes

Krugman joins James Galbraith of the *University of TX* at Austin, *Earth Island Institute* President Carl Anthony, *University of MD* economics professor Julian Simon and others in the current issue of *Mother Jones* in offering critiques of a March 4 cover story by entrepreneur Paul Hawken on the idea of "natural capitalism," or paying greater attention to the economic value of natural ecosystems.

These sources provide more ammunition for the growing movement in favor of "true-cost" or green accounting. Currently the depletion of environmental values and assets are not factored into calculations of Gross Domestic Product or other measures of economic productivity.

Source: Land Letter, Vol. 16, No. 10, New York Times 3/27/97, and Greenwire Vol. 6, Nos. 221 and 242; and Vol. 7, No. 11

Navigation and Economic Analysis Models Developed for UMR Navigation

Corps of Engineers (COE) studies to continually improve and expand Upper Mississippi River (UMR) navigation march on. The COE has recently developed an impressive video simulation (or game -- if you will) which displays tiny towboats and locks and dams on a computer screen.

Heading upstream, within a minute or so, the tows move more slowly, and lines start to form at miniature locks and dams. Dr. Don Sweeney, technical manager of the *Economics Work Group* and creator of the new **Traffic Simulation Model** says, "The picture simulates the reality of current traffic along the UMR". But the model, which was demonstrated at a February 18 meeting of the *Governors' Liaison Committee* (GLC), Sweeney says, is even more useful when specifications are changed to show what happens when traffic is increased by 25%.

With more towboats on the system, congestion forms more quickly on the computer screen, with delays reaching more than a day at a lock, compared to an average of a 3-7 hr. delay for a tow in 1995. When a time savings of 20 minutes is applied per towboat - the preliminary estimated savings of a small-scale measure - the images change again, and the back-ups are visibly reduced. When the computer is told to reduce the average lockage time by about an hour to 40 minutes per double-lockage, traffic flows freely on the model with few delays. Forty minutes is a rough estimate of the average time a lockage would take after construction of a new 1,200-foot lock. The existing average time for a double lockage is about 1 hour and 40 minutes.

The simulation of actual traffic patterns along UMR locks 22, 24 and 25 accurately reflects the workings of the entire river system, said Jeff Marmorstein, an operations research analyst who demonstrated the model for the GLC and *Economics Coordinating Committee*. The model illustrates the "cold start," he said, when traffic begins after the spring thaw and

towboats start to move up-river. It then shows how traffic pulses through the system, eventually working its way downstream.

The model now is used in the St. Louis District for the "*Lock 24 Major Rehabilitation Study*" to illustrate what happens to the output of the river system if a single lock chamber is unusable or working at less than peak efficiency, Sweeney said. It will be applied to the Navigation Study efforts to help calculate the effects of any proposed measures for reducing traffic delays.

Although the display model simulates traffic flows at three locks, the actual model used by the Navigation Study team includes all 37 locks on the system and accounts for both the UMR and the Illinois Waterway.

According to Sweeney, the model will be able to show whether a savings of even 20 minutes per lockage can make a difference at various congestion levels. The display model indicates that in some situations putting a small-scale measure in place provides noticeable relief. "You still get some congestion, but nowhere near what you get in the without-project condition (i.e. without making any navigation improvements to the current system)," Sweeney told the governors representatives from the five participating states. "Clearly the small-scale measures buy you something." The larger construction measures, on the other hand, provide even greater benefits but involve more up-front costs, he said.



As might be expected, this model takes no account of the impact of increased navigation traffic on the river's natural resources. Also it does not account for the impact of crowding more tows onto the river and more industrialization on recreational use. All it really does is calculate a simple mathematical relationship between the amount of space a towboat occupies on the river and the amount of time it takes for a lockage, and then calculates through a digital display the number of tows, barges, and towboats that can be crowded onto the river, without impacting one another by having to wait to lock through. Recreational lockages are not factored in.

At the same time, COE economists have developed of a *Regional Economic Development Analysis Model* for MN, IL, IA, WI and MO. This model will evaluate the income and employment benefits resulting from the regional distribution of the three primary benefit categories:

- transportation savings,
- water compelled rates, and
- construction.

Water-compelled rates are the degree to which water transportation availability moderates the cost of other transportation such as rail. When the analysis is complete, Dennis Robinson, an analyst with the *Institute for Water Resources* who will conduct the study, says that it will provide valuable information to states about how project benefits are spread throughout the region.

Robinson predicts that a hypothetical \$100 million construction project along the Illinois Waterway would generate \$203 million in goods and services and \$66.9 million in wages and would create 2,250 jobs in a single year. Robinson says further that just looking at the construction impacts significantly understates the total regional benefits expected from all three categories; however, it does demonstrate the type of information that will be generated by the analysis as part of the *COE Navigation Study*.

Based on the assumptions used in the example, just over half of the benefits would be gained in the state of IL

(where the hypothetical project is based), about 20% in the eastern U.S., 15% in the western U.S., 4% in the lower Mississippi Valley, 2.5% in WI, and 1-1.7% in the other study states.

Unfortunately, again the COE states nothing about the costs of such a hypothetical project on the river's natural or social interests; or to *Nature's Services* (as described in the preceding article in this issue of *River Crossings*). Biologists have long argued that faster lockages promote more lockages, more lockages mean more towboats, more towboats mean more shoreline developments and fleeting areas, and all of these things mean fewer fish and wildlife resources and an overall diminished recreational experience.

The COE's failure to adequately address these issues has been a concern of biologists and natural resource managers at least since the first locks and dams were built in the 1930s. COE navigation and economics studies seem to just march on unimpeded, while biological and natural resources studies proceed at a snail's pace or remain bogged down in bureaucracy. The few studies that are underway today were first proposed in the early 1980's during development of the UMR Master Plan and review of the construction of the 1200 ft. lock at Alton, IL..

That lock has long been completed and has now generated a demand to update and expand upstream locks (locks 22, 24, and 25) -- the very domino effect alluded to by environmental and railroad interests in the Lock and Dam 26 court case (i.e. by expanding one lock to reduce a "bottleneck", the next upstream lock soon becomes a "bottleneck" -- and so it goes upstream). Each newly constructed downstream lock is used to help generate the economic justification for the next upstream lock. In this way over the course of time, the entire navigation system is rehabilitated and navigation is expanded without ever having to address the system-wide effects of a single major action.

If economists, are also environmentalists as stated by MIT economics pro-

fessor Paul Krugman in the previous article of this issue of *River Crossings*, you couldn't prove it in the COE navigation studies. Perhaps the COE just doesn't hire the same kind of economist that Krugman refers to -- or perhaps Krugman is wrong in his statement.

However, the bottom line is that without adequate assessment of the natural resource and recreational impacts of any new construction to expand UMR navigation, the COE seems to again be proceeding "head-long" into another legal challenge from environmental interests. Perhaps this time, however, COE economists will have to confront economists of the type that Dr. Krugman refers to — those who also care about the future of the environment and our overall "quality of life".

Source: Upper Mississippi River - Illinois Waterway System Navigation Study Newsletter, April 1997, Vol 4. No. 2

National Invasive Species Act of 1996

As noted in a previous issue of *River Crossings*, The National Invasive Species Act of 1996 (PL 104-332) (NISA) passed just before the 1996 elections. Major credit for the legislation goes to Senator John Glenn (OH), who introduced it in the Senate (S. 1660), and to Congressman Steve LaTourette (OH), who introduced it in the House of Representatives (H.R. 3217).

Some highlights of the legislation include:

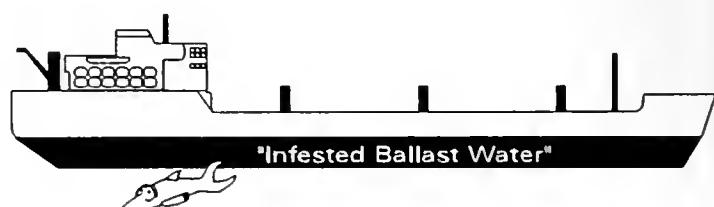
- Creation of an enforceable national ballast management program targeted to all U.S. coastal regions.
- Requirement of detailed ballast exchange reporting by all vessels.
- Reauthorization of the mandatory Great Lakes ballast management program.
- Authorization of a Ballast Technology Development Program which will bring many more resources to the search for technological and management practice tools to replace ballast exchange. This program is especially important for regions which ex-

perience a great deal of coastwise trade, like AK and the Great Lakes.

- Continuation and expansion of the State Management Plans program to include an aquatic plants program.
- Authorization of funding for research and development of a dispersal barrier for the Chicago Ship and Sanitary Canal. This provision will help prevent transfers of organisms between the Great Lakes region and the Mississippi River Basin.
- Creation of voluntary national guidelines for recreational vessels to help prevent spread of alien species overland via trailered vessels.
- Region-specific research on effects of invasive species in the Gulf of Mexico, Narragansett Bay, Chesapeake Bay, Lake Champlain, the Great Lakes, California and the Pacific Coast, and Hawaii, and other regions yet to be determined.

The National Ballast Management Program will be mandatory after three years if the shipping industry record of compliance under a voluntary system is poor. Compliance records will be established via a mandatory reporting system which the U.S. Coast Guard will establish and actively monitor. Criteria for how much compliance is enough to protect coastal resources (and preempt an enforcement regime) will be developed by the national Aquatic Nuisance Species Task Force over the next year and a half. The Great Lakes ballast program remains unchanged (and mandatory) except that the scope of the program is clarified to include vessels which may enter the lakes reporting no ballast on board.

NISA does not require ballast exchange of vessels engaged in coastwise trade (where it is of little or of no use) and it exempts vessels which pass through the exclusive economic zone (EEZ) in coastwise crude oil trade between CA and AK. Improved ballast management technologies and practices are needed to address coastwise and NOBOB (no ballast on



board) situations. In the meantime, alternative exchange sites should be identified along U.S. coastlines for vessels to use when they are unable to conduct high-seas exchange for safety reasons. NISA also does not address planned introductions or terrestrial invasions.

Passage of the NISA is a real achievement for the exotic species network which led the national effort, but as Congress turns its attention to implementation of NISA and to legislation for planned introductions of exotic species and for terrestrial invasions, involvement of concerned people and organizations will again be critical.

To obtain copies of the NISA or of the proceedings of the National Forum on Nonindigenous Species Invasions of U.S. Marine and Fresh Waters, contact: Allegra Cangelosi, Senior Policy Analyst and Great Lakes Ecosystem Director, Northeast-Midwest Institute, (202) 544-5200.



Source: Aquatic Nuisance Species Digest, March 1997, Vol. 2, No. 1

International Moratorium on Large Dams Requested

Delegates at the first International Meeting of People Affected by Dams have demanded an immediate international moratorium on the building of large dams. Attendees of the meeting, held March 11-14 in Curitiba, Brazil, said the moratorium should last until a number of demands are met, including the provision of reparations to the millions of people whose livelihoods have suffered because of dams.

Conference attendees came from dam-affected communities in India, Argentina, Chile, Mexico, Paraguay, Russia, Taiwan, Thailand and Lesotho. The meeting was organized by the *Brazilian Movement of People Affected by Dams (MAB)* with help from *(International Rivers Network)*

IRN and an international committee including India's *Save the Narmada Movement (NBA)*, the *Bioblo Action Group from Chile (GABB)* and the *France-based European Rivers Network*.

Delegates from Brazil's MAB made up the majority of people at the conference. Presently, Brazil has around 600 large dams (defined as over 15 meters), with another 494 more proposed.

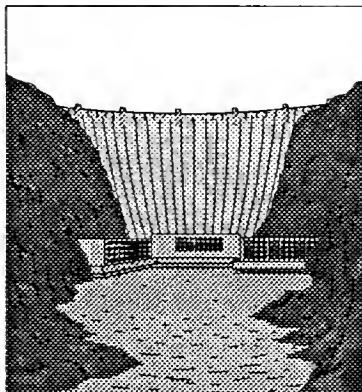
The full text, starting out somewhat like our own *Declaration of Independence*, reads as follows:

DECLARATION OF CURITIBA Affirming the Right to Life & Livelihood of People Affected by Dams

"We, the people from 20 countries gathered in Curitiba, Brazil, representing organizations of dam-affected people and of opponents of destructive dams, have shared our experiences of the losses we have suffered and the threats we face because of dams. Although our experiences reflect our diverse cultural, social, political and environmental realities, our struggles are one.

'Our struggles are one because everywhere dams force people from their homes, submerge fertile farmlands, forests and sacred places, destroy fisheries and supplies of clean water, and cause the social and cultural disintegration and economic impoverishment of our communities.

'Our struggles are one because everywhere there is a wide gulf between the economic and social benefits promised by dam builders and the reality of what has happened after dam construction. Dams have almost always cost more than was projected, even before including environmental and social costs.



Dams have produced less electricity and irrigated less land than was promised. They have made floods even more destructive. Dams have benefited large landholders, agribusiness corporations and speculators. They have dispossessed small farmers; rural workers; fishers; tribal, indigenous and traditional communities.

'Our struggles are one because we are fighting against similar powerful interests, the same international lenders, the same multilateral and bilateral aid and credit agencies, the same dam construction and equipment companies, the same engineering and environmental consultants, and the same corporations involved in heavily subsidized energy-intensive industries.

'Our struggles are one because everywhere the people who suffer most from dams are excluded from decision-making. Decisions are instead taken by technocrats, politicians and business elites who increase their own power and wealth through building dams.

'Our common struggles convince us that it is both necessary and possible to bring an end to the era of destructive dams. It is also both necessary and possible to implement alternative ways of providing energy and managing our freshwaters which are equitable, sustainable and effective.

'For this to happen, we demand genuine democracy which includes public participation and transparency in the development and implementation of energy and water policies, along with the decentralization of political power and empowerment of local communities. We must reduce inequality through measures including equitable access to land. We also insist on the inalienable rights of communities to control and manage their water, land, forests and other resources and the right of every person to a healthy environment.

'We must advance to a society where human beings and nature are no longer reduced to the logic of the market where the only value is that of commodities and the only goal profits. We must advance to a society which respects diversity, and which is based

on equitable and just relations between people, regions and nations.

'Our shared experiences have led us to agree to the following:

- We recognize and endorse the principles of the 1992 'NGO and Social Movements Declaration of Rio de Janeiro' and the 1994 'Manibeli Declaration' on World Bank funding of large dams.
- We will oppose the construction of any dam which has not been approved by the affected people after an informed and participative decision-making process.
- We demand that governments, international agencies and investors implement an immediate moratorium on building large dams until:
 - There is a halt to all forms of violence and intimidation against people affected by dams and organizations opposing dams.
 - Reparations, including the provision of adequate land, housing and social infrastructure, be negotiated with the millions of people whose livelihoods have already suffered because of dams.
 - Actions are taken to restore environments damaged by dams - even when this requires the removal of the dams.
 - Territorial rights of indigenous, tribal, semi-tribal and traditional populations affected by dams are fully respected through providing them with territories which allow them to regain their previous cultural and economic conditions -- this again may require the removal of the dams.
 - An international independent commission is established to conduct a comprehensive review of all large dams financed or otherwise supported by international aid and credit agencies, and its policy conclusions implemented. The establishment and procedures of the review must be subject to the approval and monitoring of representatives of the international movement of people affected by dams.
 - Each national and regional agency which has financed or otherwise supported the building of large dams have commissioned independent comprehensive reviews of each large dam project they have funded, and implemented the policy conclusions of the reviews. The reviews must be carried out with the participation of representatives of the affected people's organi-

zations.

- Policies on energy and freshwater are implemented which encourage the use of sustainable and appropriate technologies and management practices, using the contributions of both modern science and traditional knowledge. These policies need also to discourage waste and over consumption and guarantee equitable access to these basic needs.
- The process of privatization which is being imposed on countries in many parts of the world by multilateral institutions is increasing social, economic and political exclusion and injustice. We do not accept the claims that this process is a solution to corruption, inefficiency and other problems in the power and water sectors where these are under the control of the state. Our priority is democratic and effective public control and regulation of entities which provide electricity and water in a way which guarantees the needs and desires of people.

'Over the years, we have shown our growing power. We have occupied dam sites and offices, marched in our villages and cities, refused to leave our lands even though we have faced intimidation, violence and drowning. We have unmasked the corruption, lies and false promises of the dam industry. Nationally and internationally we have worked in solidarity with others fighting against destructive development projects, and together with those fighting for human rights, social justice, and an end to environmental destruction.

'We are strong, diverse and united and our cause is just. We have stopped destructive dams and have forced dam builders to respect our rights. We have stopped dams in the past, and we will stop more in the future.

'We commit ourselves to intensifying the fight against destructive dams. From the villages of India, Brazil and Lesotho to the boardrooms of Washington, Tokyo and London, we will force dam builders to accept our demands.

'To reinforce our movement we will build and strengthen regional and international networks. To symbolize our growing unity, we declare that 14 March, the Brazilian Day of Struggles Against Dams, will from now on become the International Day of Action

Against Dams and for Rivers, Water, and Life.

'Water for life, not for death!

'Approved at the First International Meeting of People Affected by Dams, Curitiba, Brazil, March 14, 1997.'

Source: World Rivers Review, Volume 12, Number 2, April 1997

Catfish 2000

The First International Ictalurid (catfish) Symposium -- *Catfish 2000* will be held on June 22-25 at the River Center in Davenport, IA (319) 326-8500. The symposium will feature a wide array of presentations on ictalurid catfishes presented by speakers from Canada, Europe, and South America, as well as a full cross-section of the U.S.



In addition to keynote presentations, a total of 68 technical presentations are scheduled. These will discuss:

- biology and catfish ecology,
- habitat use and assessment,
- age and growth,
- feeding ecology,
- reproductive biology,
- movement and migratory behavior,
- population genetics,
- sampling methods and stock assessment,
- status and dynamics of recreational and commercial fisheries,
- effects of harvest regulations,
- stocking strategies,
- human dimensions,
- conservation of stocks at risk, and
- effects of introduced ictalurids.

A trade show will feature tackle for catfish anglers, boats, baits, and also equipment for testing water quality, sampling fish, and conducting other fisheries studies. Fishing seminars (open to the public) will be hosted by well-known catfish angling experts.

The local *In-Fisherman Club*, associated with the *Quad Cities Conservation Alliance*, will provide guides for catfishing trips on the Mississippi and other nearby rivers. Organized social events will include a good old fashioned riverside catfish fry with all the fixings and festivities. Additionally, trips and tours for spouses and families will be featured to local excursion boats, shopping centers, riverboat gambling casinos, theaters, museums, and historic sites.

At the conclusion of the symposium a panel will address the future direction for management of North America's catfishes. The panel will include various chiefs of federal, state, and independent management groups, angling authorities, and the general public. Following the panel discussion, MICRA and the Upper Mississippi River Conservation Committee (UMRCC) will host a facilitated workshop for state and agency resource managers and researchers to set a course for future catfish management.

The Proceedings of Catfish 2000, including peer-reviewed papers based on presentations at the symposium, will be provided to registrants. The proceedings will be made available to others for purchase.

Overnight accommodations for the symposium are available at the adjacent Black Hawk Hotel and the Radisson, just down the street, as well as at host of other more remote hotels and motels locations throughout the Quad Cities. A large attendance is expected so the steering committee urges attendees wishing to stay on sight to get their room reservations in early.

M.R. F.I.S.H. Project

MICRA learned in May that the National Fish and Wildlife Foundation (NFWF) has agreed to sponsor a challenge grant involving the public in habitat management and enhancement on the Upper Mississippi River (UMR) bordering IA. The project entitled, "*Mississippi River Fishers Involved in Saving Habitat (MRFISH)*", is patterned after similar "*Fishermen Involved in Saving Habitat (FISH)*" pro-

jects in the Pacific Northwest on smaller streams.

The \$10,000 M.R.F.I.S.H. project is expected to begin this summer, and will utilize volunteer labor to improve riparian habitat and fish cover by securing and maintaining fallen trees and snags in UMR aquatic and riparian habitats. It is estimated that 275 such fallen trees and snags can be secured with funding provided by the project.



John Pitlo, research biologist at IA's Bellevue Fisheries Research Station saw a need to secure fallen trees for fisheries and aquatic habitat. Many valuable trees and snags that provided cover and habitat for aquatic organisms were simply being washed away by high waters, creating significant losses to sportfishing and aquatic productivity.

Jerry Rasmussen, MICRA Coordinator/Executive Secretary suggested to Pitlo that MICRA apply for challenge grant funding for such a project from the NFWF. The NFWF annually funds challenge grant projects, both large and small, to restore and improve natural ecosystems. While the MRFISH program will not construct new habitats, it will prevent important shoreline and riparian habitats from being washed away. Additionally, the project will have the added benefit of preventing fallen trees from washing downstream into the locks and dams, into public and private boat docks, and into the paths of commercial and recreational boats. The NFWF agreed and the project has been funded.

Partners in the project and their contributions include the following:

- NFWF - \$5,000;
- MICRA - \$5,000;
- U.S. Fish & Wildlife Service, Large Rivers Fisheries Coordination Office -

administrative support;

- IA Department of Natural Resources - oversight and management of field work, as well as monitoring and documentation of project success; and
- Eastern IA Conservation Organizations - all labor.

Funding will be used to design and acquire adequate anchoring mechanisms, and complementary M.R. F.I.S.H. caps for volunteers. The latter will go a long way in encouraging participation and in advertising the concept both at club meetings and on the street.

Although the project is small, it is a first step in getting the public directly involved in large river habitat projects. If successful, other such projects may be completed elsewhere on the interjurisdictional rivers of the Mississippi River Basin.

Warmwater Fish Ladders

American shad are swimming up Chesapeake Bay tributaries "in numbers that haven't been seen for 20 years or more," aided by a series of "elevator-like" lifts that hoist them past hydroelectric dams and send them on their way to spawn near Harrisburg, PA.

The two fish lifts, operating since 1991 at the Conowingo Dam on the Susquehanna River in MD, have been deemed a success by the U.S. Fish and Wildlife Service. Two new lifts, at Safe Harbor and Holtwood dams in PA, have opened 46 more miles of river to spawning of American shad.

Biologists hope the lifts promote the "comeback" of shad, which has been "heavily damaged" from 200 years of overfishing and loss of spawning habitat. MD imposed a catch moratorium on the fish in 1980.

Conowingo operators report they have been lifting fish over their 90-foot dam at a record-setting pace since early April. Success so far has been limited at Holtwood, despite its \$20 million price tag and billing as the largest lift in the country.

Officials say the fish at Holtwood

may be "confused" by great turbulence near the dam and unable to find the elevator door. Engineers are now working to manipulate the water flow.

Source: Greenwire Vol. 7, No. 9

Who Should Pay?

"After more than 60 years of successful wildlife management ranging from habitat restoration to restocking efforts, few people yet realize that sportsmen -- the men and women who fish and hunt recreationally -- were the first citizens to stand up and be counted in the drive for conservation in America. Those men and women voluntarily sponsored legislation and lobbied for legislation that enacted taxes on their sporting equipment purchases, with the revenue thus collected going directly to conservation efforts. That is not ancient history. It remains the most successful conservation story in America. In the 1995 fiscal year, those taxes generated \$410.9 million dollars. Some of that money, collected by the federal government at the manufacturer's level, is allocated to the U.S. Fish and Wildlife Service. The rest is returned to the various states under the *Sport Fish and Wildlife Restoration Program*. Over the years, those taxes have raised billions of dollars.

'But something is askew in today's vastly expanded conservation movement. That movement has grown far beyond the ranks of hunters and anglers. A very significant portion of the modern conservation movement is designated as "non-consumptive" outdoor resource users. That group, composed of birders, hikers, campers, canoeists and others who do not hunt or fish, are quite vocal in their demands that conservation agencies such as the Department of Wildlife and Fisheries provide increasing opportunities for their preferred forms of outdoor recreation. They want camping areas and well maintained trails, and convenient launching facilities on pristine, protected streams and rivers, and they want habitat protection and enhancement programs focused on songbirds. Trouble is, those "nonconsumptive" outdoor recreation groups do not demonstrate much

willingness to help fund the very programs they demand.

'The facts in this issue are interesting. Most agencies, including this one, have well established, ongoing programs to protect and replenish so-called non-game species and unique native flora. Most of the conservation programs that benefit game animals and fish also benefit non-game species ranging from chipmunks to songbirds. Spokesmen for various sportsmen's organizations have done far more than such protectionist groups as the *People for the Ethical Treatment of Animals* or the *Fund for Animals* to support a small tax on birdseed and binoculars to benefit non-game programs. Those "consumptive" hunters and anglers have been footing the bills for years for the very programs many non-consumptive outdoor recreationists demand but resist paying for.

'As an example, at the request of this department's Natural Heritage Program, the Louisiana legislature created a Wild Louisiana Stamp to generate funds specifically for non-game protection and enhancement programs. The stamp sells for a mere \$5.50, the same as a basic fishing license, and was required of anyone utilizing our Wildlife Management Areas (WMAs) for recreation other than hunting and fishing. Strangely enough, most of the non-consumptive portion of our constituents refused to buy those stamps when they were introduced in 1993. Today, four years into the program, many still resist and complain loudly about having to pay anything at all to utilize WMAs. Others avoid using WMAs just to avoid buying a Wild Louisiana Stamp. Something is askew in today's conservation movement.

'It should also be noted that every basic fishing license or basic hunting license sold in Louisiana makes federal matching funds available to this department. Those funds go into fish and wildlife management programs that benefit all species, including non-game wildlife. The sale of Wild Louisiana Stamps generates no federal matching money. One would think that non-consumptive users would elect to buy a basic fishing license, even if they did not elect to fish. Unfortunately, they choose not to do that.

'As the demand for non-consumptive outdoor recreation opportunities escalates, a strong effort is afoot to enhance funding for non-game wildlife conservation, outdoor recreation and environmental education by finally enacting that federal tax on birdseed and binoculars that I mentioned earlier. In addition, the tax would apply to other outdoor recreation gear such as camping equipment and canoes. For the average outdoor oriented family, the cost is projected to be about \$5-10 per year. The benefit to the conservation of wildlife and outdoor recreation would amount to about \$350 million per year. Louisiana would receive an estimated \$5.8 million annually.

'But guess what? Some non-consumptive outdoor recreation groups are opposing the tax, known as the *Fish and Wildlife Diversity Funding Initiative*. Nonetheless, support is steadily growing. At present, Louisiana Governor Mike Foster and the governors of seven other states have signed on to support the act, along with more than 1,000 organized groups representing a variety of interests.

'The message must be sent to Congress that it is high time for all outdoor recreationists to begin paying their share to support the conservation effort. What can you do, aside from purchasing at least a basic fishing license? Each of us should let our congressmen and senators know that we support this initiative, popularly known as *"Teaming With Wildlife"*. With all of us working together, we can make the *Wildlife Diversity Funding Initiative* a reality. It will cost each of us a few dollars a year, but it will make a real difference for the future of wildlife in Louisiana and throughout the nation.'

-- James H. Jenkins, Secretary, Louisiana Department of Wildlife and Fisheries, 11-1-96.



TEAMING WITH WILDLIFE
a natural investment

MICRA is on record in support of the "Teaming With Wildlife" Initiative.

Have Trunk, Will Travel

"*Exotic Aquatics Traveling Trunks*" are now available in MN to help educators teach students about the spread of harmful invasive species.

Each trunk contains preserved, museum-quality specimens of exotic species, a curriculum with nine lesson plans, books, maps, posters and an award-winning video produced by the MN Dept. of Natural Resources. Although the trunk was designed for grades 4-7, it can easily be adapted for younger or older students.

Doug Jensen, traveling trunk coordinator for *Minnesota Sea Grant* said, "The response has been overwhelming. In just under a month, I have over one-third of the available reservation slots filled for the 1996-97 school year.

For Duluth-Superior area teachers and educators, the trunks are offered free from *Minnesota Sea Grant* for a one-week period on the condition that they pick up and deliver the trunk. Otherwise, shipping, handling and insurance costs about \$75.

The Exotic Aquatic Traveling Trunk project was sponsored and coordinated by *Minnesota Sea Grant* in collaboration with the University of MN *Bell Museum of Natural History*,

National Park Service, U.S. Fish and Wildlife Service, *National Park Foundation* and MN Dept. of Natural Resources.

To receive a brochure or schedule a reservation, contact Doug Jensen, University of MN Sea Grant, Exotic Species Information Center, 2305 East Fifth Street, Duluth, MN 55812-1445, phone (218) 726-8712, email djensen@mes.umd.edu.

Zebra Mussel CD-ROM Available

A team of U.S. Army, Corps of Engineers Waterways Experiment Station researchers have developed a new zebra mussel CD-ROM. The "Zebra Mussel Information System" includes identification, biology, ecology, impact, detection and monitoring, risk assessment, management and a list of references on the zebra mussels.

"As the knowledge base concerning the biology and management of zebra mussels expands, it is becoming increasingly more difficult to access pertinent and up-to-date information," said researcher Michael Grodowitz. The program runs under Windows using a hypertext interface, illustrations, maps, color photographs and an interactive question-and-answer section to help the user identify adult and immature zebra mussels. There is currently no charge for the

CD-ROM, but the number of copies is limited.

Contact Michael J. Grodowitz, U.S. Army Corps of Engineers Waterways Experiment Station, CEWES-ER-A, 3909 Halls Ferry Road, Vicksburg, MS 39181, (601) 634-2972, email growdowm@ex1.wes.army.mil

PA Fish Wall Chart

A series of full color 17"x22" charts displaying coldwater; Warmwater; migratory; miscellaneous game, pan, and forage species is available from the state of PA. The price is only \$1.41 each plus \$2 shipping (1-5) or \$3 (6 or more). Send check or money order to the Fish & Boat Commission, Publication Section, P.O. Box 67000, Harrisburg, PA 17106-7000.

Fishes of AL and the Mobile Basin

This 832 pg. hardbound book was released in December. Species accounts provide a color photograph, range map, physical characteristics, adult size, habitat, and biology. The book is available through the Alabama Geological Survey, P.O. Box O, Tuscaloosa, AL 35486. Send check or money order for \$50 plus \$6 for shipping and handling.

Meetings of Interest

July 10-13: 3^d Annual Mississippi River Conference, St. Louis, MO. This year's theme will be "*Health of the River: Health of the People*". Contact: Mississippi River Basin Alliance, Box 3878, St. Louis, MO 63122, (314) 822-4114, FAX (314) 821-4292.

July 14-15: Rocky Mountain Symposium on Environmental Issues in Oil and Gas Operations, Colorado School of Mines, Golden, CO. Contact: Ms. Sherri Thompson, U.S Bureau of Land Management, Lake-wood, CO 80215, (303) 239-3758, FAX (303) 239-3799.

July: III International Symposium on Sturgeon, ENEL Training Centre, Piacenza, Italy. Contact: Dr. P. Bronzi, ENEL spa - CRAM via Monfalcone, 15-20132 Milan (Italy) phone: + + 39-2-72243412 or 3452, FAX: + + 39-2-72243496, E-mail:bronzi@cram.enel.it.

July 27-30: Voluntary Solutions in Nutrient Management, Tunica, MS. Contact: Gwen Necaise, MS Soil and Water Conservation Commission, (601) 354-7645.

August 18-20: Wild Trout VI, "Putting the Native Back in Wild Trout", Montana State Univ., Bozeman, MT.

Contact: Robert Gresswell, U.S. Forest Service, Pacific Northwest Research Station, 3200 SW Jefferson Way, Corvallis, OR 97456, (541) 750-7410, gresswer@ccmail.orst.edu

August 24-28: 127th Annual Meeting of the American Fisheries Society, Monterey, CA. Contact: Paul Brouha, (302) 897-8617, Ext. 209.

September 1997: Clean Enough? A Conference on Mississippi River Water Quality, New Orleans, LA. Contact: University of New Orleans Metropolitan College, Office of Conference Services, Lakefront Campus, Education 122, New Orleans, LA 70148.

Early November 1997: Ecological Restoration as a Key Element of Regional Conservation Strategies - 9th Annual Society for Ecological Restoration Conference , Ft. Lauderdale, FL. Contact: SER, 1207 Seminole Highway, Suite B, Madison, WI 53711, (608) 262-9547

December 6-10: Symposium on the Effects of Riparian Land-Uses on

Aquatic Ecosystems. Milwaukee, WI. Contact: John Lyons, WI Dept. of Natural Resources, 1350 Femrite Dr., Monona, WI 53716-3736, (608) 221-6328, FAX (608) 221-6353, lyonsj@dnr.state.wi.us.

May 3-6, 1998: Watershed Management: Moving from Theory to Imple

mentation, Denver, CO. Water Environment Federation. (703) 684-2400.

May 23-28, 1998: First International Ictalurid Symposium - Catfish 2000, Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180. (573) 751-4115, FAX (573) 526-4047.

Congressional Action Pertinent to the Mississippi River Basin

Agriculture

H.R. 246 and H.R. 247 (Peterson, D/MN) extension of existing and expiring contracts under the **Conservation Reserve Program**.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the **Food Security Act of 1985 and the Clean Water Act** to permit the unimpeded use of privately-owned crop range and pasture lands that have been used for the planting of crops or the grazing of corn in at least 5 of the preceding 10 years.

H.R. 861 (Moran, R/KS) authorizes a farmer or rancher whose bid for re-enrollment of land into the **Conservation Reserve** is rejected to unilaterally extend the contract for a final year.

H.R. 1185 (Minge, D/MN) to ensure that land enrolled in the land conservation program of the state of MN known as *Reinvest in MN (RIM)* remains eligible for enrollment in the **conservation reserve** upon the expiration of the RIM contract.

Brownfields

H. R. 1396 (Rothman, D/NJ) to assist states and local governments in assessing and remediating brownfield sites and encouraging environmental clean-up programs.

H.R. 1462 (Visclosky, D/IN) to authorize the EPA Administrator to establish a pilot project providing loans to states to establish revolving loans for the environmental cleanup of brownfield sites in distressed areas that have the potential to attract pri-

vate investment and create local employment.

Fish and Wildlife

S. 361 (Jeffords, R/VT) amends the **Endangered Species Act** to prohibit the sale, import, and export of products labeled as containing endangered species.

S. 491 (Ford, R/KY) to amend the **National Wildlife Refuge System Administration Act of 1966** to prohibit the Fish and Wildlife Service from acquiring land to establish a refuge of the National Wildlife Refuge System unless at least 50% of the owners of the land in the proposed refuge favor the acquisition.

S. 751 (Shelby, R/AL.) to protect and enhance sportsmen's opportunities and conservation of wildlife.

H.R. 374 (Young, R/AK) amends the **Sikes Act** to enhance fish and wildlife conservation and natural resources management programs.

H.R. 478 (Herger, R/CA) amends the **Endangered Species Act of 1973** to improve the ability of individuals and local, state and federal agencies to comply with that act in building, operating, maintaining or repairing flood control projects.

H.R. 752 (Chenoweth, R/ID) amends the **Endangered Species Act of 1973** to ensure that persons that suffer or are threatened with injury resulting from a violation of the act or a failure of the Interior Secretary to act in accordance with that act have standing to com-

mence a civil suit on their behalf.

H.R. 1155 (Fazio, D/CA) to exempt certain maintenance, repair and improvement of flood control facilities in CA from the **Endangered Species Act**.

Flood Insurance

H.R. 230 (McCollum, R/FL) to ensure that insurance against the **risk of catastrophic natural disasters**, such as hurricanes, earthquakes, floods, and volcanic eruptions, is available and affordable, and to provide for expanded hazard mitigation and relief.

Forests

H.R. 101 (Baker, R/LA) amends the **National Forest Foundation Act** to extend and increase the matching funds authorization for the foundation, to provide additional administrative support to the foundation, to authorize the use of investment income, and to permit the foundation to license the use of **trademarks, trade names, and other such devices** to advertise that a person is an official sponsor or supporter of the Forest Service or the National Forest System.

House Resources Committee on April 8 held a hearing on **livestock grazing policies** on public domain national forests.

House Agriculture and House Resources committees held a joint hearing April 9 to review forest ecosystem health conditions in the U.S.

H.R. 1376 (Eshoo, D/CA) to amend the **Forest and Rangeland Renewable Resources Planning Act of 1974** and

related laws to strengthen the protection of biodiversity and ban clearcutting on federal lands and to designate certain federal lands as Northwest Ancient Forests, roadless areas, and special areas where logging and other intrusive activities are prohibited.

Government Affairs

S. 34 (Feingold, D/WI) to phase out federal funding of the Tennessee Valley Authority.

Grazing

H.R. 547 (Nadler, D/NY) requires the Interior and Agriculture secretaries to establish grazing fees at fair market value for use of public grazing lands.

Land Acquisition

H.R. 1487 (Campbell, R/CA) to provide off-budget treatment for one-half of the receipts and disbursements of the Land and Water Conservation Fund, and to provide that the amount appropriated from the fund for a fiscal year for federal purposes may not exceed the amount appropriated for that fiscal year for financial assistance to the states for state purposes.

Mining

S. 325, S. 326, and S. 327 (Bumpers, D/AR) to repeal the percentage depletion allowance for certain hardrock mines, provide for the reclamation of abandoned hard-rock mines, and ensure federal taxpayers receive a fair return for the extraction of locatable minerals on public domain lands, respectively.

Parks

S. 301 (McCain, R/AZ) and H.R. 682 (Kolbe, R/AZ) authorizes the Interior Secretary to set aside up to \$2 per person from park entrance fees or assess up to \$2 per person visiting the Grand Canyon or other national parks to secure bonds for capital improvements to the park.

H.R. 104 (Bartlett, R/MD) authorizes the private ownership and use of National Park System lands.

H.R. 302 (Skaggs, D/CO) a bill entitled the "Rocky Mountain National Park Wilderness Act of 1997".

H.R. 901 (Young, R/AK) to preserve the sovereignty of the United States over public lands by requiring that United Nations heritage designations be subject to congressional approval.

Public Lands

S. 477 (Hatch, R-UT) amends the Antiquities Act to require an Act of Congress and the consultation with the governor and state legislature prior to establishment by the president of national monuments in excess of 5,000 acres.

S. 691 (Murkowski, R/AK), to require public review and the authorization of Congress for any presidential designations of national monuments, biosphere reserves, and world heritage sites on public lands;

S. 749 (Dorgan, D/ND) to provide for more effective management of the National Grasslands.

H.R. 919 (Miller, D/CA) establishes fair market value pricing of federal natural assets, and for other purposes.

H.R. 1196 (Skaggs, D/CO) to amend the Colorado Wilderness Act of 1993 to extend the interim protection of the Spanish Peaks planning area in the San Isabel National Forest.

Refuges

H.R. 511 (Young, R/AK) to amend the National Wildlife Refuge System Administration Act of 1966 to improve the management of the refuge system.

H.R. 512 (Young, R/AK) to prohibit the expenditure of funds from the Land and Water Conservation Fund to create new National Wildlife Refuges without specific authorization from Congress.

H.R. 952 (Miller, D/CA) to clarify the mission, purposes and autho-

rized uses of the National Wildlife Refuge System and to establish requirements for administration and conservation planning of that system.

House Resources Committee approved on April 30, H.R. 1420, the National Wildlife Refuge System Improvement Act of 1997 reforming the management of the National Wildlife Refuge System.

Takings

S. 709 (Hager, R/NE) to protect private property rights guaranteed by the fifth amendment to the Constitution by requiring federal agencies to prepare private property taking impact analyses and by allowing expanded access to federal courts.

H.R. 95 (Solomon, R/NY) to ensure that federal agencies establish the appropriate procedures for assessing whether federal regulations might result in the taking of private property, and to direct the Agriculture Secretary to report to the Congress with respect to such takings under programs of the Dept. of Agriculture.

Transportation.

S. 468 (Chafee, R/RI) to continue the federal role in developing a national intermodal surface transportation system through programs that ensure the safe and efficient movement of people and goods, improve economic productivity, preserve the environment, and strengthen partnerships among all levels of government and the private sector;

S. 586 (Moynihan, D/NY) to reauthorize the Intermodal Surface Transportation Act of 1991.

Senate Commerce Committee held a hearing April 24 on the reauthorization of the Intermodal Surface Transportation Efficiency Act.

H.R. 1609 (Molinari, D/NY) to reauthorize the Intermodal Surface Transportation Efficiency Act of 1991.

Water and Wetlands

H.R. 128 (Crapo, R/ID) to preserve the authority of the states over waters within their boundaries, to delegate the authority of the Congress to the states to regulate water.

H.R. 227 (McCullum, R/FL) directs the Secretary of the Army to conduct a study of mitigation banks.

H.R. 238 (Robert Menendez D/NJ) to amend the Oil Pollution Act of 1990 to make the act more effective in preventing oil pollution in the nation's waters through enhanced prevention of, and improved response to, oil spills, and to ensure that citizens and communities injured by oil spills are

promptly and fully compensated, and for other purposes.

H.R. 550 (Oberstar, D/MN), Non-Point Source Water Pollution Prevention Act of 1997 amends the Clean Water Act to establish requirements and provide assistance to prevent nonpoint sources of water pollution, and for other purposes.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the Food Security Act of 1985 and the Clean Water Act to permit the unimpeded use of privately-owned crop range and pasture lands that have been used for the planting of crops or the grazing

of corn in at least 5 of the preceding 10 years.

Wilderness.

House Resources Committee panel held a hearing April 15 on implementation of the **1964 Wilderness Act** on Bureau of Land Management and Forest Service lands.

H.R. 1567 (Hansen, R/UT) to provide for the designation of additional wilderness lands in the eastern U.S.

Sources: Land Letter, STATUS REPORT, Vol.16, No. 2, 5, 8, 11, and 13; and NOAA Legislative Informer, March 1997, Issue #22



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River Crossings

NATIONAL RIVER COUNCIL QUARTERLY

Volume 6

July/August 1997

Number 4

New MICRA Website

MICRA is developing a new, more interactive website through cooperation with the U.S. Geological Survey/Biological Resources Division (USGS/BRD) in Columbia, MO. MICRA's website will eventually house our basinwide paddlefish database, as well as other technical information. Come visit us at <http://wwwaux.msc.nbs.gov/MICRA>.

Sturgeon Threatened Worldwide

A working group of 33 member states to the Convention on International Trade in Endangered Species (CITES), which includes the European Union, voted unanimously at their June meeting to restrict trade in all varieties of sturgeon -- the primary source of the world's caviar.



"Take sturgeon"

All countries that import or export caviar must take steps to regulate trade by 4/98, with the most severe limits expected to be on Caspian Sea beluga sturgeon. Because of the worldwide threat to sturgeon species, the eggs from paddlefish and

other species (including bowfin) are now being used as a caviar replacement. We noted in the January/February 1997 issue of *River Crossings* that paddlefish caviar is already selling for as much as \$89.95 for a 4 oz. jar on the west coast.

Readers will note that the May/June issue of *River Crossings* reported that MICRA, at their 7th annual meeting in May, called for a moratorium on the export of paddlefish caviar due to potential threats to this country's paddlefish populations.

In Russia, 25 lbs. of sturgeon caviar will net a fisherman a meal plus maybe \$200, after selling the remaining roe to smugglers. Meanwhile, at restaurants

in New York, Paris or London, this same product might fetch as much as \$13,000 — or double that when it comes from the rare beluga sturgeon.

The top five U.S. caviar markets in 1995 were:

• New York	113,120 lbs.
• Miami	18,922
• San Francisco	8,545
• Washington	6,624
• Los Angeles	6,347
• Other U.S. Cities	27,642
• Total	181,200

Total 1995 Retail Value of this caviar was \$353 million—most of which came from Russia, China and Kazakhstan.

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The situation in Russia has gotten so out of hand that during the six week sturgeon spawning season (Spring) along the Volga River delta (700 miles southeast of Moscow) a free-for-all exists in the war between legal fishermen, Russian border guards and police armed with assault rifles, and a small army of poachers.

Downstream in the Caspian Sea, home to 90% of the world's sturgeon, over-fishing, pollution, and oil exploration threaten the species. The Caspian Sea is surrounded by Iran, Turkmenistan and Azerbaijan on the south, and Kazakhstan and Russia on the north. Experts say Russia's caviar industry, the largest in the world, may collapse within five years. This industry presents a case study of how the breakup of the Soviet Union and the sudden impoverishment of workers are having some unexpected and undesirable results with international consequences.

"If nothing changes and the planned development of oil goes forward, then in two or three years there won't be enough sturgeon to sustain a fishing industry," said Vladimir Ivanov, director of the Caspian Fisheries Research Institute in Astrakhan, the regional capital. "There won't be enough even for poachers. And extinction is a possibility in 10 years or so."

During the Soviet era, the production of caviar, as of everything else, was a state monopoly, so tightly controlled that statistics on annual output were an official secret. Poaching was rare, quality control strict, and not even the most discriminating gourmet doubted that the taste of Russian caviar was superb.

But even then, Caspian Sea sturgeon were at risk. Beginning in the 1960s, Soviet factories along the Volga River pumped vast amounts of pollutants into its water, oblivious of the consequences for the fish who swam as much as 1,500 miles upriver to lay their eggs. Dams also blocked the sturgeon from reaching spawning grounds they had used since the time of the dinosaurs. By the late 1980s, sturgeon populations were in a nose dive.

With the dissolution of the Soviet Union in 1991, a long-standing agreement between the Soviets and Iran not to over fish the Caspian Sea collapsed. And as poverty and industrial stagnation spread through the Caspian region, many people saw sturgeon as a kind of instant currency. The drastic increase in poaching has cut the official sturgeon catch in the Caspian Sea from 25,000 tons/yr in the mid-1980s to just 3,400 tons last year, and reduced caviar production by more than 80% in the same period, according to government figures.

The result of this chaos is a nearly open field for poachers and smugglers, who move large quantities of home-packed caviar from the Caspian Sea into Western Europe and the U.S. through Turkey and Eastern Europe.

The smuggled caviar and its packaging often look like the real thing, but the

quality is suspect. In Europe, some importers are starting to insist on caviar from Iran, which produces less than Russia but keeps a tighter lid on poachers and smuggling. "It's an easy recipe but you have to be very accurate in the way you do it," said Caroline Raymakers, a researcher with *Traffic*, the trade monitoring arm of the *World Wildlife Fund*.

Traffic and other environmental groups are pressing for tougher international trade rules to protect Caspian Sea sturgeon. Russian fishery officials are urging the presidents of the Caspian nations to sign an accord strictly limiting each country's catch. There is talk of a total ban on sturgeon fishing. But experts worry that even the most draconian measures may fail in the face of the latest threat to sturgeon.

As noted earlier, other fish species

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
(MICRA)
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Bettendorf, IA 52722-0774

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

such as paddlefish and bowfin are now being sought as a replacement for sturgeon caviar. MICRA was formed in 1991 to address U.S. concerns related to paddlefish populations. Some states continue to maintain both commercial and recreational fisheries for the species, while others list it as threatened or endangered in their states. The species is on the "watch list" of the U.S. Fish and Wildlife Service.



"paddlefish"

MICRA began its basinwide population assessment in 1995, and is now in its third year of the study. Until this project is complete, and we have fully assessed the status of this ancient species, a moratorium on the export of paddlefish products seems justified.

Sources: By Line Article by Lee Hockstader, The Washington Post 6/9/97; World Wildlife Fund; and National Journal's GREENWIRE, The Environmental News Daily, 6/19/97

Sturgeon and Rubber Bands

This Spring Michael A. Eggleton, *Mississippi State University*, received word from a lower Mississippi River commercial fisherman that he had collected sturgeon measuring 20-24 in. long that had "rubber bands" wrapped around their bodies. The rubber bands were cutting into the gills and skin of the fish behind the dorsal fin.

Later in the Spring, Eggleton too collected a shovelnose sturgeon from a floodplain lake upstream of Vicksburg, MS with a rubber band wrapped as described above. Another biologist said he had observed the same thing 10 years ago, also on



"shovelnose sturgeon"

the Mississippi. Eggleton speculated that this must be a fairly common occurrence, and sent an inquiry over the Internet asking if anyone else had recorded similar experiences. He wondered If the phenomenon was related to someone's tagging program or if these fish are swimming through rubber bands laying on the river bottom as juveniles.

To Eggleton's surprise, Guy Verreault, Fisheries biologist for the Ministere environnement et Faune 506 rue Lafontaine, Riviere-du-Loup, Qc, Canada reported similar findings for Atlantic Sturgeon in the St-Lawrence estuary. Verreault reported that during a late 1980s survey he found 8% of all his catches ($n=796$) wrapped with rubber bands. He also observed that the phenomenon occurred only on smaller fishes, less than 130 cm. long.

Verreault reported that he immediately initiated an information program for post office staff in Quebec, asking postmen to keep all rubber bands used for mail delivery in their bags rather than throwing them away. Verreault reported that this campaign gave good results as he observed that less than 0.5% ($n=1097$) of sturgeons caught last year carried rubber bands. Verreault said that he thinks sturgeon are very vulnerable, especially the young, to rubber bands when they're looking for prey on the river bottom. He said it probably causes significant mortality in the species.

Tom Squiers, ME Department of Marine Resources reported further that since 1977 his agency has captured over 1600 adult shortnose sturgeon in the Kennebec River in the State of ME, and found three which had rubber gaskets around their heads. These gaskets were cutting into the flesh and gills as Eggleton described. Squiers also speculated that the sturgeon are swimming into these gaskets as they feed on the bottom.

C. Greg Lutz, Associate Specialist, Aquaculture (affiliation unknown) reported that commercial fishermen targeting freshwater drum in the Atchafalaya Basin indicate that this is indeed a very common condition for shovelnose and pallid sturgeon in the Melville area. These fish (in the Mel-

ville area) are also occasionally found with discarded condoms over their mouths.

Ohio River Mussel Poaching

OH and WV wildlife officials have raised concern about mussel poaching on the Ohio River. Officers say poachers, often outfitted with diving gear and maps of mussel beds, slip across state borders under the cover of darkness in order to illegally take thousands of dollars worth of fresh-water mussels in a single night. These mussels are taken back across the border and sold to buyers in states where mussel harvesting is legal.

Eventually the mussels wind up at one of a handful of exporters in TN, AL and IA before being shipped to Japan and other Asian countries for use in the \$3 billion-a-year cultured pearl industry. The shells are processed into pieces the size of a match head, that are inserted into oysters as seeds for the production of cultured pearls.

OH enforces a daily take of 15 mussels/person that can be used only for bait. A bill passed by the state House, and pending in the Senate, would outlaw the taking and selling of mussels entirely. Andrew Pierce, a special agent with the U.S. Fish and Wildlife Service in Delaware, OH, said poachers started moving into OH and WV in 1991, looting the waters of the Muskingum River near Marietta and other areas of the Ohio River basin. Since then, the OH Division of Wildlife has assigned two or three full-time officers to mussel law enforcement throughout the summer and fall. They scour seldom-traveled roads, boat launches and motel parking lots for trucks with out-of-town license plates.

"TN, AL, KY and AR have been depleted of commercial shells," Pierce said. "What's left are too small to harvest." An average night's work for a typical Ohio River poacher can net \$1,000, though some haul in \$4,000 worth of shells in one shift. Shells generally sell for \$2-4/lb., but prices have shot up as high as \$13/lb.

A few poachers have been given federal jail terms, but a typical sentence is probation and a \$200 fine.

North America is home to about 300 mussel species -- 20% of which are listed on the federal endangered species list. Mussels can live for decades and grow as large as a foot wide and weigh several pounds. Freshwater mussels are probably the most endangered animals in North America.

About 8,000 tons of mussels are harvested from streams each year, and roughly 6,000 tons are shipped to Japan, Korea and China, said Lonnie Garner, president of *U.S. Shell Co.* in Hollywood, AL.. The others are lost or die en route. In addition to the damage done by poachers, mussels have been impacted by pollution, vanishing habitat and the arrival of foreign zebra mussels that overwhelm the native species. But Garner, while not supporting the poachers, thinks the environmentalists' concerns are overblown.

Source: By Line Article by Paul Souhrada, The Associated Press, 05/22/97

Climate Change

"A major political fight is brewing over what to do about the long-term threat of global warming and (it's) side effects that scientists say would hit Louisiana harder than anywhere else" in the U.S. The impacts could include rising seas, coastal erosion, stronger, more numerous hurricanes, and new health threats. Scientists say that about 4,500 square miles of LA's vast coastal marshlands could be submerged under rising seas over the next century. But while these risks loom "in the distant future," the state's industrial base "would take an immediate economic hit" from limits on greenhouse-gas emissions. And because policy decisions "will be based on science that even its advocates admit is sketchy...any decision amounts to a gamble."

Despite this concern, as the U.S. participated in negotiations on a global climate change treaty this summer,

Senators John Breaux (D/LA) and Mary Landrieu (D/LA) signed on to a resolution that would require "parity" between industrialized and developing nations in reducing emissions, "a requirement many observers say would scuttle the treaty." *Sierra Club* lobbyist Dan Becker said Breaux and Landrieu "deserve the scorn and criticism of people in Louisiana who are at risk from rising seas" (John McQuaid, New Orleans Times-Picayune, 7/6).



In support of these concerns, a new study on climate change concludes that "humans have almost certainly played a role" in the "slight global temperature increase" observed during the last 100 years. The study, published on 7/2 in the journal *Nature*, estimates that there is "only one chance in 100 that the past century's one-degree warming trend can be explained solely by natural factors such as solar variations and volcanic activity".

The study indicates a statistical relationship in which Northern Hemisphere temperature depends on temperature in the Southern Hemisphere. This pattern, which has strengthened over time, can be explained by the climatic effects of anthropogenic trace gases

and tropospheric sulphate aerosols.

According to study co-author Robert Kaufmann, *Boston University*, "For the first time based on an analysis of historical record...we can see the human fingerprint of activity on the global temperature record." But past analyses have reached similar conclusions, and some researchers criticized the study as repetitive of earlier work (AP/USA Today 6/26).

However, on 6/18/97 more than 2,400 scientists called on President Clinton to endorse "early domestic action to reduce U.S. [greenhouse-gas] emissions via the most cost-effective means". George Woodwell, founder of the *Woods Hole Research Center* in MA and one of the first to sign the statement, said he hoped it would persuade Clinton to lead the U.S. away from its reliance on fossil fuels. Another cosigner, John Holdren of *Harvard University*, suggested a tax on fossil-fuel use and a more favorable attitude toward nuclear power, which emits no greenhouse gases (Wall Street Journal, 6/19).

In response, Gail McDonald, president of the industry-funded *Global Climate Coalition* (GCC), dismissed the scientists' statement as a "public relations gimmick." McDonald noted several scientific sources -- including a report in the 5/16 issue of *Science* -- that are uncertain about the link between industrial emissions and global climate change.

Journalist, Ross Gelbspan (Washington Post 5/25/97) in his book *"The Heat Is On"* points out that a "tiny band" of scientists and "deep-pocketed industry public relations specialists" have manipulated the media to create the perception that scientists are "sharply divided" over climate change. Gelbspan asserts that several global warming critics have risen to prominence through industry sponsorship and by "demand[ing] access to the press ... as a right of journalistic fairness."

Swedish scientist Bert Bolin, a former chair of the *UN's Intergovernmental Panel on Climate Change*, contends that such "greenhouse skeptics" have

helped to create an "increasing polarization of the public debate" in some nations that is not reflected by discussions among scientific experts. Gelbspan suggests that if the fossil-fuel industry were "honestly concerned about getting at the truth of climate change, it would contribute to a blind-trust pool of private research funds" that the federal government could allocate to national research organizations.

President Clinton warned at the UN Earth Summit + 5 conference in New York on 6/26, that "...human activity is dangerously increasing the Earth's temperature, but he rebuffed appeals by European leaders" that he set a specific target for reducing U.S. greenhouse-gas emissions in the near term. Clinton said the scientific evidence of global warming is "clear and compelling," and he "painted a dire picture" of a future in which 9,000 square miles of coastal areas in FL, LA and other states would be flooded by rising sea-levels resulting from global warming (Harris/Warrick, Washington Post 6/26). He said more severe droughts, floods and infectious-disease outbreaks could stem from climate change.

In leading the U.S. "to do our part," Clinton said his "first" task would be to "convince the American people and the Congress that the climate change problem is real and imminent." The president promised to host a White House conference on climate change this fall, at which he hopes to forge a consensus on "realistic and binding limits that will significantly reduce our emissions of greenhouse gases."

He also outlined a short list of new initiatives aimed at preventing global warming:

- An Energy Dept. program to install solar-energy panels in 1 million homes across the country by 2010;
- Continued efforts in the national laboratories to develop clean-energy technologies, including autos that are up to three times more fuel efficient than today's models;
- Requiring projects financed by the *Overseas Private Investment Corp.* to adhere to new environmental guidelines; and

- A \$1 billion package of foreign aid to help developing countries obtain clean energy technologies (Federal News Service/ New York Times 6/26).

However, "on the critical question" of greenhouse-gas limits, Clinton aides said the president "had no intention of announcing targets until he was certain they were attainable" (Harris/Warrick, Washington Post 6/26). White House Council on Environmental Quality Chair Katie McGinty said the European proposal for a 15% cut in greenhouse-gas emissions by 2010 would be "impossible" for the U.S. to meet (Investor's Business Daily 6/26).

"Some business leaders said the president took a sensible approach." Gail McDonald, president of the industry-based *GCC* said, "He resisted the temptation to use this highly public event to unveil draconian measures that would be harmful to our economy and harmful to the American people" (Harris/Warrick, Washington Post 6/26). Environmental groups on the other hand criticized Clinton's reluctance to set greenhouse-gas targets.

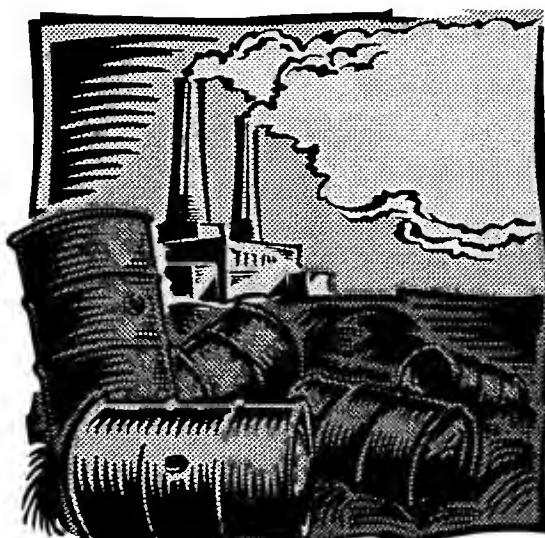
Unfortunately, the UN's Earth Summit + 5 conference "ground to a quiet close" on 6/27 "in an atmosphere tinged with gloom." Although many countries had been looking to the U.S. for leadership on climate change, world leaders must now look to the climate-change conference in Kyoto, Japan, in 12/97 in hopes of reaching an agreement on greenhouse-gas emissions limits (Crossette, New York Times 6/26). Katie McGinty said

Clinton "is going to engage the American people on the issue in these summer months." Asst. Secretary of State Eileen Claussen said that reaching an agreement in Kyoto may be easier than "getting it ratified by the Senate" (Mark Jaffe, Philadelphia Inquirer, 6/29).

Meanwhile, President Clinton, sided with environmentalists in a dispute that split his own advisers, when he announced on 6/25 his support for EPA's "tough" new air-quality standards for ozone and particulates. The regulations will force dozens of cities to find new ways to cut pollution or face federal sanctions such as the loss of highway funds. "But the administration also sought to soften the blow with provisions that will delay the impact and give local officials flexibility in deciding how to comply" (Warrick/Harris, Washington Post 6/26).

EPA's proposed standards (11/96) lower ozone tolerance from 0.12 ppm averaged over a one-hour period to 0.08 ppm over an eight-hour period (John Fialka, Wall Street Journal 6/26). The agency said its ozone implementation plan will be based on the recent recommendations of the 37-state *Ozone Transport Assessment Group*, which called for emissions reductions from coal-fired power plants in the Midwest. As those recommendations take effect, areas that might otherwise be thrown into noncompliance under the new standards will be placed in a new "transitional" category with compliance deadlines extended to 2004 (EPA release, 6/25).

The agency also will allow five years to develop a nationwide network of particulate-monitoring stations, and another three years after that for states to develop implementation plans. It would then take several more years for new controls to take effect (EPA release, 6/25). The White House also approved a trading scheme for pollution permits (Fialka, Wall Street Journal 6/26). About 411 counties nationwide would exceed one or both of the new standards; 134 counties exceed current standards (Gersten-zang/Cone, Los Angeles Times 6/26).



In the end, Congress has the authority to overturn the standards, and industry sources say that more than 250 members of Congress, 27 governors and 1,000 local officials have come out in opposition (Nichols/Hall, USA Today 6/26). However, the president's decision was praised by several Northeast elected officials (Andrew Revkin, New York Times 6/26)

Sources: Greenwire Vol. 7, No. 18; and National Journal's GREENWIRE, The Environmental News Daily, 6/19; 6/26; 6/27; 6/30; 7/3; and 7/10/97

Environmental Concerns Rising

People around the world are "even more likely today than five years ago to say that economic growth should be sacrificed if necessary to ensure the environment is protected," according to a global public-opinion survey released on 6/23. In the survey, Toronto-based *International Environmental Monitor Ltd.* (IEM) and its research partners in 24 countries interviewed more than 26,000 "average citizens"-- "representing more than 60% of the world's population"-- between 1/97 and 3/97.

While research is continuing in the UK, Chile, China and Mexico, the results from 20 countries found that:

- More than eight in 10 people in 19 countries believe that environmental problems will affect their children's health, while majorities in 17 countries believe their own health has been affected;
- Majorities in 13 countries "and pluralities in all but three" believe that environmental protection is a "greater priority" than economic growth;
- Majorities in 14 countries said their national government is doing a "poor or very poor job" of dealing with environmental problems; and
- Majorities in 12 countries and pluralities in all but two said "strong action" should be taken soon to prevent climate change "even if there are major costs."

People in 13 of the countries were asked similar questions in a 1992 *Gallup International Institute* survey. A comparison of attitudes in these countries in 1992 and 1997 reveals that concerns about human health effects of environmental damage have "significantly increased" in 10 countries, while views favoring environmental protection over economic growth has grown in nearly half of the 13 countries. Doug Miller of IEM said, "We were surprised by the sharp rise of public health concerns in both developed and developing countries over a five-year period in which their leaders have moved in the opposite direction on the environment".

The survey shows that New Zealand and Canada rank first and second, respectively, in the list of countries where citizens rank the environment ahead of the economy (Keith McArthur, Toronto Globe and Mail, 6/23).

Source: National Journal's GREENWIRE, The Environmental News Daily 6/5/97

Native Americans And The Environment

Federal agencies enforcing the Endangered Species Act (ESA) will now defer to tribal plans on Indian lands, under an agreement signed in early June. Interior Secretary Bruce Babbitt and Commerce Secretary Bill Daley said the special order was intended to clarify the ESA's application to 95 million acres of tribal lands held in federal trust. The order establishes procedures to provide tribes with technical and scientific support to develop habitat-protection plans and acknowledges that Indian lands "are not federal public lands . . . and are not subject to



federal public land laws." "For too long we have failed to recognize the needs of Indian tribes to be consulted and part of the process from the beginning, and the traditional knowledge they can share about species, habitat and conservation," Babbitt said.

Babbitt oversees the U.S. Fish and Wildlife Service and the Bureau of Indian Affairs, and Daley, the National Marine Fisheries Service. They signed the agreement with four tribal leaders in the Indian Treaty Room at the Old Executive Office Building. The order says the government "shall give deference to tribal conservation and management plans for tribal trust resources that govern activities on Indian lands . . . and address the conservation needs of the listed species."

Meanwhile, environmental lawsuits and regulations pushed by Native Americans are "becoming more common," reports the *NY TIMES*. For example, last year, two tribes on the Fort Belknap Reservation in Hays, MT, sued mining firm *Pegasus Gold Inc.* for alleged water-pollution violations from a gold mine adjacent to the reservation. The suit led to a \$37 million settlement with the Assiniboine and Gros Ventre tribes for damages to reservation water.

Then last month, the tribes sued Pegasus in state court to prevent the firm from creating a new pit until it cleaned up an old one. The tribes claimed that two existing pits have poisoned wells, cut stream flow and may have contaminated groundwater. Pegasus has defended its environmental record and said some of the tribes' claims have been proven "absolutely false."

Such legal actions have been aided, in part, by amendments to the Clean Water and Clean Air acts, which gave tribes the same standing as states to enforce environmental standards. Tribes are also taking a larger role "because of their traditional relationship to nature." For example, in ID, the Nez Perce tribe is working on reviving gray wolf and salmon populations.

Meanwhile, a "rekindled interest" in ancestral customs has led to environmental activism in some tribes. At

Fort Belknap, for example, the destruction of a sacred site helped set off the Pegasus controversy (Jim Robbins, N.Y. TIMES, 2/9).

Source: Greenwire Vol. 6, No. 189, and National Journal's GREENWIRE, The Environmental News Daily, 6/6/97

Environmental Bias in Schools ?

Critics of environmental education say children are being "scared green" by textbooks and a mass media that serve up a steady diet of gloomy, politically slanted messages about the planet's future. "We're creating



"doomsday kids," said Michael Sanera, a prominent critic whose new book, *Facts Not Fear: A Parent's Guide to Teaching Children About the Environment*, is being hailed by conservatives. "Children are getting slogans and dogma instead of being taught to think critically."

The problem, as some TX officials described it, was the "unbalanced" view children in public schools were getting about pollution. As a result, they held a seminar for educators in Houston and invited leading oil and chemical corporations to offer advice on teaching children about the environment. The companies helped pay for the seminar, and some promoted classroom materials they had developed for schools. One brochure, produced by Exxon, touted the ad



vantages of gasoline power over electric vehicles.

The Houston conference, co-sponsored by the *Texas Natural Resources Conservation Commission*, infuriated environmental groups, who said they weren't invited. But it also focused attention on a question that got national attention on the 17th observance of Earth Day: *"Who controls the environmental education of the nation's children?"*

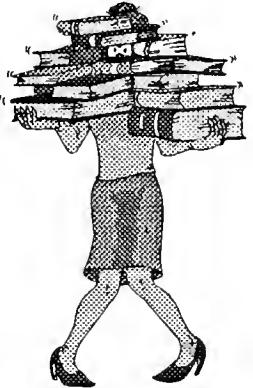
Environmentalists say that both Sanera's book and the Houston seminar are part of a nationwide effort by industries and political conservatives to discredit environmental instruction -- while simultaneously promoting industry-friendly teaching materials and textbooks.

According to a report released on 4/9/97 by the Oakland, CA-based *Center for Commercial-Free Public Education*, environmental education in public schools "is being systematically eliminated and replaced by propaganda supplied by corporate polluters". The report includes a 10-page list "documenting corporate links to the anti-environment, anti-environmental education movement." It "is especially critical" of Michael Sanera's book. Sanera, director of the *Center for Environmental Education Research*, a Tucson, AZ-based think tank, is an affiliate of several conservative foundations funded by oil, mining and the Religious Right. Sanera reportedly played a key role in blocking a 1990 AZ initiative that would have required environmental education in AZ's public schools. The report also links Sanera to the

Heritage Foundation, one of four conservative think tanks that "the report says are funded by corporate polluters such as Amoco, Shell and Dow Chemical."

Both sides agree that the criticism has begun to have an effect. For example, some states have abolished mandatory environmental study in public schools, and several other states are considering revising or killing their programs. About 30 states now have environmental education programs, though many individual schools offer little formal instruction, or none at all. Additionally, some environmentalists fear a federally sponsored environmental education program could be threatened when it comes up for reauthorization in Congress later this year. Environmental education encompasses a wide range of teaching activities that include environmental science classes and coverage of ecology topics in social studies or science books.

Schools and teachers who choose to teach about the environment may select from among literally thousands of books and teaching guides, including materials published by textbook companies, environmental groups and major corporations. In terms simplified for children -- or in some cases jazzed up for the MTV generation-- these guides introduce students to exceedingly complex and controversial topics such as global climate change and wetlands destruction--subjects that confuse and divide many of their parents. Just as with teachers themselves, the quality of the books varies greatly.



Professionals in the field acknowledge that problems exist. Some textbooks contain errors, and some teachers have blurred the line between instruction and advocacy. But the suggestion that children are being traumatized

ed or brainwashed is "just plain wrong" said Kevin J. Coyle, president of the Washington, D.C. based *National Environmental Education and Training Foundation (NEETF)*. In 1994, NEETF commissioned what is believed to be the most comprehensive survey of schoolchildren's attitudes about the environment. Of 2,139 students surveyed nationwide, the environment ranked below AIDS, guns and kidnapping as a source of concern. Less than half listed the environment as something they worry about.

Other research suggests that environmental awareness actually improves children's confidence, Coyle says. Children believe environmental problems can be solved, polls show, and that they can play a role in the solution. "Kids actually develop a more hopeful attitude because there they can do things like turning off lights or not wasting water," Coyle said.

Coyle and others believe the backlash against environmental education is politically motivated. Consider, for example, the flap over an alleged outburst of activism at the Canyon View Elementary School in Tucson. In 1994, second-graders sounded off to the local newspaper after a developer destroyed a patch of desert behind their school to make room for a new subdivision. "The desert used to look beautiful, but now they are wrecking it," wrote one 7-year-old. "People are so greedy about money," wrote another. Conservative lawmakers cited the letters as evidence of environmental education gone awry. Sanera, in a newspaper article, has suggested that the young writers were echoing "teachers' ideas about biodiversity or sustainability." The controversy helped spur a rollback of AZ's mandatory environmental education program, which was abolished the same year. Control of funds for environmental education was turned over to loggers' and cattlemen's associations.

But Ron Melnick, the teacher whose pupils wrote the letters, says the critics got it wrong. Melnick said his youngsters reacted viscerally to the

sight of bulldozers toppling centuries-old saguaro cactuses that they had studied during nature walks. The letters, he said, were the children's idea. "I bent over backward to show them the developer's side of things," Melnick said. "It's ironic that the story is being turned around like that." In a recent interview, Sanera stood by his book and its anecdotes and insisted that he strongly supports environmental education -- though in a rigidly scientific format and with no federal involvement.

Daniel Barry, director of the environmental group *Clear*, points out that Sanera's organization is also part of the *Claremont Institute*, which is funded by *Amoco, Exxon and Philip Morris*. Sanera responded that the environmental criticism amounts to "guilt by association" and that his work is independently produced.

Elsewhere, critics of current education practices have gone so far as in Laytonville, CA where an attempt was made to ban the book "*The Lorax*" by Dr. Seuss as too environmental. In NH legislation has been proposed to require parental consent for teaching of some environmental subjects.

This "backlash" against environmental education "is forcing educators to respond," reports Scott Allen in the *Boston Globe*. Allen cites *North American Association for Environmental Education (NAAEE)* Executive Director Edward McCrea as saying that "both the left and the right" have overstated problems with environmental education to further their causes. The DC-based NAAEE recently adopted guidelines for selecting teaching materials "that stress accuracy and fairness.", and they are working with the USEPA in developing new national standards for teaching about ecological issues.

Bora Simmons, past president of the NAAEE says that schools should not only provide students with accurate, balanced information, but encourage them to use "good citizenship skills" in drawing their own conclusions about complex environmental problems. "Environmental education is not about creating environmental activists," she said. "What we are about is creating good citizens."

Defining the line between the two can be tricky, as many educators are finding out. At Kramer Middle School for Environmental Studies in SE Washington, D.C. -- the nation's only junior-high magnet school with an environmental emphasis -- Principal Nancy Berry has implemented a strict no-advocacy policy that she hopes will keep controversy at bay. "Most of our kids have never heard of the *Sierra Club* -- and they have no reason to," she said, referring to the environmental group. Still, children tend to draw their own conclusions about the world.



For Kramer's Desdemona Harris, 12, something clicked on the day she visited the nearby Anacostia River for a science fair project. Armed with a bucket and a bacteria detection kit, she collected water samples and tested them for the presence of human sewage. The samples were incubated and coded with colors that would show the range of contamination, from mildly tainted purple to putrid yellow. Of six samples, four were yellow. "It tells you that most of our water is dirty," Harris said. "I think we need to clean it up."

Meanwhile, a survey conducted by polling firm *Roper Starch Worldwide*, to be released this fall by the NEETF, indicates that 95% of U.S. adults and 96% of parents think environmental education should be taught in schools (NEETF release, 6/9). A second poll released by NEETF indicates that 27% of U.S. adults have done volunteer work on behalf of the environment in the past year or two. The survey indicated that volunteer involvement in environmental and public-land projects has risen 6% since 1993 (NEETF release, 4/22). The poll's margin of

error was +/- 3%, with 1,003 respondents.

Secular environmentalists "consider the greening of religion as the movement's most significant development in recent history," reports the *Phoenix AZ Republic*. The *National Religious Partnership for the Environment* (NRPE) which was formed in 1993, says it now includes more than 2,000 active congregations.

NRPE-affiliated groups have spent about \$4.5 million on education and activities since 1993, while another \$4.5 million is planned to be spent over the next three years. Among examples of green activism by religious organizations, a group in California known as the "*Redwood Rabbits*" is fighting to preserve ancient redwoods, while the *AZ Ecumenical Council*, representing about 700 congregations, has formed an environment committee to pursue educational projects.

Sources: The Washington Post, Byline Article by Joby Warrick, 4/22/97; Greenwire Vol. 6, No. 231 and 239; Steve Yozwiak, Phoenix *Arizona Republic*, 4/9/97; and National Journal's GREENWIRE, The Environmental News Daily, 6/18/97.

River Education and Biodiversity are Key to the Future

Contributed Article by
Kelly Wiese, junior
University of Missouri-Columbia
School of Journalism

"Conservation education is an essential part of teaching children today. Through education, people can learn how to conserve different ecosystems, especially the Mississippi River. Education on conservation and other biodiversity issues is available through a variety of sources. For example, visiting and exploring museums, such as the *Mid-America Aquacenter*, *St. Louis Children's Aquarium*, is a wonderful way for children to learn about animals and preserving their environments.

'Another method to learn about con-

servation is through programs and materials that the (MO) Department of Conservation or (MO) Department of Natural Resources offer the public. Lesser-known agencies, including the U.S. Coast Guard and the Army Corps of Engineers, can also provide valuable information. Perhaps the most obvious way to educate people is through curricula in schools of all levels. Through traditional teaching methods, children learn at an early age the significance of conservation and biodiversity to other organisms on this planet. Effective conservation education teaches biodiversity, the interrelationship of all species and their environments.

'Museums provide a one-on-one interactive way for children and adults to learn about conserving plants and animals that live in their backyards as well as how to help conservation efforts in other ecosystems. For example, the *Mid-America Aquacenter* is the only children's aquarium in the world. *St. Louis Children's Aquarium* offers hands-on exhibits and activities for children, displaying animals in their natural environments so people can work to conserve those habitats. In addition, Aquacenter staff are available to answer questions about the Mississippi River, the Amazon River and rainforest, and the connecting oceans. *Mid-America Aquacenter*, like all public aquariums, intensely studies one local natural phenomenon. The Aquacenter's focus is the middle Mississippi River. Showing people an actual habitat is an easy way for them to learn more about their ecosystem.

'Another idea to discover ways to conserve the environment is through materials from the (MO) Department of Conservation and other organizations. These groups specialize in conservation and biodiversity issues, so they have programs and information for people of all ages and education levels. For example, the (MO) Department of Conservation has a "clean streams" program, in which volunteers clean up and test the quality of many waterways that feed into the Mississippi. Seeking materials from less-recognized groups, such as the U.S. Coast Guard and the Army Corps of Engineers, is a way to learn a different perspective on conservation. A third channel to learn by is school curricula. From basic

science courses to upper level conservation classes, students can learn through direct teaching methods about habitats, animal species, biodiversity and conservation.

'A new and growing form of education is the Internet. Through interactive pages and colorful displays, children and adults can absorb information at their own rate and according to their interests. The *Mid-America Aquacenter* is at the cutting edge of this technology as well. The center's web page address is: <http://www.i-base.com/aquacntr>. The web site provides a tour of the Mississippi River, the Amazon rainforest and the oceans. The site also includes a map of the aquarium and information on teacher and classroom activities.

'New studies show that today's fourth-grade students in the United States are very strong in science proficiency, even when compared worldwide. This is the age they learn about conservation issues. Out-of-class experiences, such as museum tours, are further proof that educators should continue effective teaching about environmental conservation and problems."

Another future site to gather information on the environment and interjurisdictional rivers is on the MICRA website being developed at: <http://wwwaux.msc.nbs.gov/MICRA>.

LMR Levee Settlement

Eight local and national conservation groups have agreed to settle their legal challenge to a U.S. Army Corps of Engineers (COE) plan to enlarge levees along the Lower Mississippi River, simultaneously protecting more than 11,000 acres of bottomland hardwoods and wetlands from destruction, and allowing important flood control projects to move forward.

The COE had hoped to use the soil under forested wetlands (bottomland hardwoods) adjacent to the river to strengthen and enlarge levees in MS, AR, LA, TN and MO (see figure at the bottom of the next page). But the

conservation groups, represented by the *Sierra Club Legal Defense Fund*, challenged the COE's 20-year-old environmental analysis. The lawsuit demanded that the COE evaluate the environmental impacts of the project before deciding how to proceed, as required by federal law.

"We've already lost 80% of the bottomland hardwood wetlands along the Lower Mississippi River," said Lonnie Bailey, president of the *Mississippi Wildlife Federation*. "The Corps' outdated plan to dig up thousands of acres of the remaining vestiges of those critical wetlands so the Corps could have an easy source of construction material was unacceptable, especially when alternative sources are readily available."

The agreement with the conservation groups will allow the COE to proceed with several levee enhancement projects, while a detailed environmental study is completed. The COE had refused to update the 20-year-old environmental study during more than a year of negotiations which preceded the lawsuit, but quickly moved to settle the matter after the lawsuit was filed. "It's unfortunate that our clients had to sue the Corps to force it to comply with our country's most basic environmental law," said Melissa Samet, attorney for the *Sierra Club Legal Defense Fund*. "We're hopeful that the Corps' decision to abide by the law indicates that such litigation will not be necessary in the future, and that the Corps is taking its environmental mission more seriously."

Under the agreement, the COE will prepare a Supplemental Environmental Impact Statement (SEIS) for future levee raising projects, and less rigorous environmental studies for projects which will be completed in 1997 and 1998. The COE expects to complete the SEIS by 1999.

The legal agreement "recognizes the importance of the levee system to those who depend on it for protection from Mississippi River floodwaters and the need for prudent environmental planning," said Martin Lancaster, the

Assistant Secretary of the Army. "The Corps does not have to choose between improving flood protection in the Mississippi Valley and protecting its important natural resources. We can do both."

The projects include work over the next 35 years to raise sections of the 1,600-mile levee system to prevent overtopping during major floods. Certain sections of the levees are now 6-8 ft. below the level needed to contain such a flood. Mississippi delta conservation groups are not opposed to flood control projects, so long as projects avoid unnecessary environmental impacts and mitigate for the loss of habitat when alternatives are unavailable.

"The Corps' decision to abide by the law will help prevent an entirely avoidable and senseless loss to our nation's wetlands," said Suzi Wilkins, Executive Director of the *Mississippi River Basin Alliance*. "It is vital to the Delta's wildlife and to the health and safety of the people in the Lower Mississippi region that the Corps follow through on its agreement."

Source: *Mississippi Monitor*, July 1997

Floods and Farming

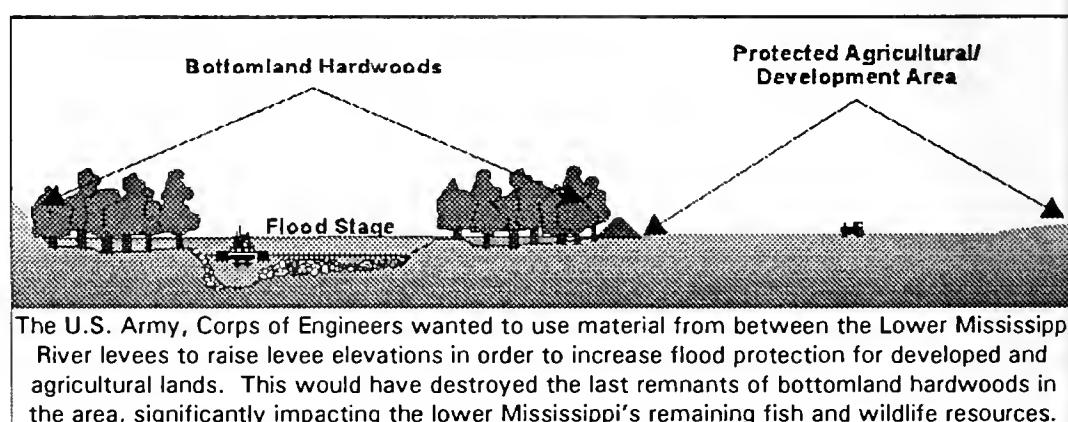
A recent *Mississippi State University* (MSU) doctoral dissertation indicates that farm yields sometimes rise with high waters. The Mississippi Delta study challenges the notion that flooding is always bad for farming. Donald Jackson, MSU professor who advised the study's author, said he hopes the work will help temper debate involving

hotly contested flood-control projects.

The dissertation reviews 31 years of government-compiled data on tributary flows in the upper Yazoo River basin, and on cotton and soybean yields in 15 northwestern counties. Jackson said the data indicates that spring floods "might not be as serious a thing as people suggest." In her 99-page report, study author Qifeng Ye wrote that during the 30-year period between 1964 and 1994, "no factor associated with flood events adversely influenced production of cotton and soybeans." Under certain conditions, Qifeng wrote, Yields rose with more flooding, probably because soils were replenished and because increased soil moisture tempered the effects of subsequent drought.

The study also examined relationships between floods and fish populations, and found that moderate flood-control efforts might not be as harmful as once thought. Qifeng, who is now living in China, concluded that her study raises questions about large-scale, traditional flood-control efforts. She also wrote: "*Conservation of rivers and their fisheries and agronomic enterprise are not necessarily mutually exclusive.*"

Delta farming interests and officials with the U.S. Army Corps of Engineers (COE) in Vicksburg were eager to review the report. The COE has spent \$110 million on flood-control projects in the upper Yazoo basin and plans to spend about \$200 million more. "There's no doubt that flooding makes an area more productive," said COE spokesman Michael Logue. But, he said, the timing, severity and



frequency of floods are critical to farming. This year's high water, like past floods, prompted calls for increased federal spending on flood control in the Delta.

Source: By Article by Bruce Reid, Clarion-Ledger

Western Governors Address Flooding Issues

At their June meeting, the Western Governors' Association (WGA) resolved the following:

"The WGA strongly supports the goal of reducing flood vulnerability through effective floodplain management and flood mitigation planning and urges the adoption of consistent and cost-effective federal policies that promote mitigation and enhance the disaster recovery process. State flood disaster recovery policy must also be examined to ensure compatibility and cost-effectiveness. As federal policy is developed to reduce flood recovery costs, states must be proactively involved in the development of new federal policy to assure that costs are not simply shifted to state and local government, but that the policies empower states and locals to more effectively and efficiently respond to, and devise ways to reduce future flood damages.

'The governors believe that many of the recommendations contained in the report of the Interagency Floodplain Management Review Committee -- if implemented -- would improve floodplain management and flood mitigation and response [one such method -- setback levees -- is shown at the bottom of this page]. While the WGA supports "sharing the responsibility" as outlined in the report, not all of the recommendations are appropriate in the West and implementation should consider regional differences and needs.

'The governors directed WGA staff to establish a task force of the states to work with the appropriate federal agencies to:

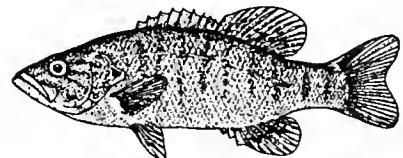
- develop a vision of how to reduce flood damages in the West;
- review the Interagency Floodplain Management Review Committee Report, and advise the governors on recommendations that have been adopted as well as those that should be adopted, taking into consideration their appropriateness for the West;
- provide recommendations to the Governors on flood control and floodplain management activities that are unique to Western states;
- review and comment on the policy guidance provided by the Office of Management and Budget and the Council of Environmental Quality, dated February 18, 1997, addressing "Floodplain Management and Procedures For Evaluation and Review of Levee and Associated Restoration Projects" as well as the policy guidance from the Federal Emergency Management Agency, dated September 11, 1996, describing the "Policy for Rehabilitation Assistance for Levees and Other Flood Control Works;" and;
- provide strategies for local governments for regulating activities in flood plain areas.

'The WGA staff shall complete the task force report with appropriate supporting resolutions for consideration at the 1997 WGA Winter Meeting. A copy of this resolution is to be sent to The President of the United States, to the Director of the Office of Management and Budget, to the Chair of the Council on Environmental Quality, and the respective congressional delegations of all member states of the WGA."

WI Dam Removal/Overhaul

Interior Secretary Bruce Babbitt has endorsed an agreement between the

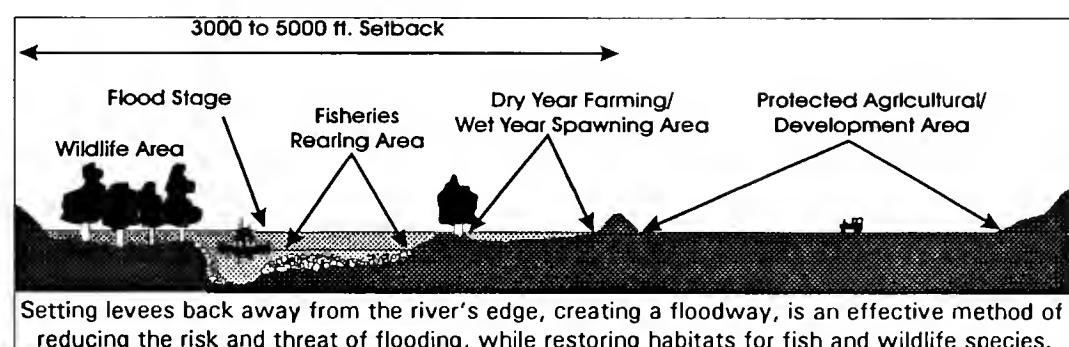
Wisconsin Electric Power Company, state and federal officials, and conservation groups, to improve three watersheds, replenish 160 river miles, and protect more than 22,000 acres of pristine lands in the Menominee River Basin of WI and MI.



"smallmouth bass"

The 40-year, landmark settlement represents the first time in American history that a utility, public officials and environmentalists have negotiated a cooperative agreement prior to the start of the relicensing process. *Wisconsin Electric*, serving thousands of customers, will continue profitable, low-cost energy production. Also, by improving the watershed for brook trout, lake sturgeon, smallmouth bass and walleye, as well as for hunting and rafting throughout the area, the agreement will boost and broaden the diverse, renewable recreation-driven economy.

"This is a watershed agreement in both meanings of the term" said Babbitt. "By looking at the entire natural Menominee basin, as well as all current and future needs of the stakeholders who live in it, we proved it was possible to save time, millions of dollars, and above all the fish and wildlife we care for as stewards of God's creation. As others approach the complex and contentious process of operating and relicensing dams, this stands as a model for the nation."





Specifically, the *Wilderness Shores Settlement Agreement*:

- Removes the Sturgeon Hydro Dam in MI and the Pine Hydro and Woods Creek Dams in WI to restore free flowing river habitat;
- Stabilizes flow down 70 miles of Menominee River from the Sturgeon Falls Dam to Green Bay;
- Increases minimum flows in Paint and Michigamme rivers for fish and recreation;
- Provides for run-of-river at Way Dam, Hemlock Falls Dam, and the Lower Paint Diversion Dam;
- Provides run-of-river at all dams during the spring spawning period for fish;
- Installs fish barriers at all hydro project intakes to reduce fish loss from turbine mortality;
- Establishes a \$3.4 million fish protection fund;
- Provides fish passage upstream of several hydro projects when and where appropriate;
- Protects 22,000 acres of pristine and riparian project land from development;
- Conserves federal and state-listed species like the endangered gray wolf and threatened bald eagle; and
- Develops a Canoe Trail with wilderness camp sites along the Menominee River, with signs to describe Voyager historical and cultural heritage in the area.

Points of Contact for partners to the Agreement include:

- Rita Hayen, Project Engineer, *Wisconsin Electric Power Company*, (414) 221-2413;
- Jim Fossum, Biologist, *U. S. Fish and Wildlife Service*, (414) 465-7440;
- Tom Thuemler, Fishery Biologist, *Wisconsin DNR*, (715) 582-5008;
- Gary Whelan, Fishery Biologist, *Michigan DNR*, (517) 373-1280;

- Angie Tornes, Environmental Protection Specialist, *National Park Service*, (414) 297-3605;
- Jim Schramm, Executive Director, *Michigan Hydro Relicensing Coalition*, (616) 869-5487; and
- Sara Johnson, Executive Director, *River Alliance of Wisconsin*, (608) 257-2424

Source: Dept. Of the Interior Press Release, 6/16/97

Nation's First Riparian Forest Buffer Goal

The Chesapeake Bay basin jurisdictions of MD, VA, PA, and the District of Columbia; U.S. EPA Administrator Carol Browner, and the *Chesapeake Bay Commission* are planning to protect existing riparian forests and specifically to reforest 2,010 miles of bay tributaries over the next 13 years—the first goal of its kind in the nation.

"By setting this goal, we help improve water quality in the Chesapeake Bay, provide for accountability in government, and give the public an objective to work toward—2,010 by 2010," commented VA Governor George Allen, speaking on behalf of the *Chesapeake Executive Council* (CEC).

According to Al Todd, U.S. Forest Service liaison to the Chesapeake Bay Program Office, increasing the riparian forest buffer "may prevent half a million pounds of excess nitrogen from entering the Bay each year," and will directly improve the habitats of cold water and anadromous fish. The 2,010 miles of enhanced habitat will provide woody debris for shelter and an abundance of leafy material—the primary building block of the freshwater food web. "It will also help build a corridor of bird habitat," Todd explained.

The benefits of forested riparian buffers—streambank stabilization, habitat improvement, sediment and pollution filtering—are widely recognized and many watersheds have made riparian protection a priority. However, *this initiative bears watching not only because it has set an*

ambitious goal, but also because it cuts across jurisdictional boundaries. The regional agreement commits each jurisdiction to develop a riparian buffer implementation plan by 6/98. Each plan will spell out strategies to conserve existing riparian forest corridors, measures to coordinate state programs, and techniques for outreach and education. Each one will also specify exactly how many miles of forested buffer it will restore and how it will meet its goals. In addition to state and private lands, approximately 1.7 million acres of federal lands in the Chesapeake Bay will be included in the riparian buffer plans.

A 31-member *Riparian Forest Buffer Panel* created by the CEC in 1994 and composed of government officials, environmental activists, farmers, developers, foresters, and scientists recommended that the 2010 goal be met by increasing private sector involvement through incentives like tax reliefs and tree planting credits, and by supporting research, monitoring, technology transfer, and education. The panel suggested taking advantage of existing incentives including cost-share programs, grants, and conservation easements. The panel would also like to see the states try different approaches, perhaps the creation of an income tax credit for landowners who establish buffers on their property.

Todd says that it costs on average between \$400-\$1,000/acre to install a riparian buffer, and though each state will fund its plan differently; a number of federal and state conser-



vation incentives such as the Forest Stewardship Program can help offset the costs.

For example, the Conservation Reserve Program, administered by the USDA Natural Resources Conservation Service, can provide agricultural landowners with some easement payments and cost-share programs, and in MD, which plans to plant 600 miles of forest buffer by the year 2010, the Buffer Incentive Program already pays landowners \$300 per acre to install buffers on streambanks in addition to providing cost-share assistance. In PA, the idea of a nonprofit tree trust fund is on the table. As momentum builds, a unique combination of direct incentive programs, volunteerism, state program funding, and new ideas are likely to surface in each state.

Other public agencies and private groups such as the *Alliance for the Chesapeake Bay*, the *Chesapeake Bay Foundation*, and *Trout-Unlimited* have outreach and restoration projects that dovetail with the reforestation goal and lend muscle to the ambitious target. As is often the case, local efforts may forge ahead of larger federal programs. The *Elizabeth River Project* in Eastern VA, for example, has already begun to install buffer zones to help restore native riverine habitat and contribute to the 2,010-mile goal.

"We're seeing a groundswell of community and volunteer involvement" says Todd, who also notes that "building a new riparian stewardship ethic is something else we hope to accomplish."

Contact: Al Todd, U. S. Forest Service Liaison to the Chesapeake Bay Program Office, or Ann Lackey, Riparian Initiative Fellow, Chesapeake Research Consortium, Chesapeake Bay Program Office, 410 Severn Avenue, Suite 109, Annapolis, MD 21403, (800) 968-7229.

Source: Nonpoint Source News-Notes, April/May 1997, ISSUE #48

Grazing Update

A new U.S. Natural Resources Conservation Service (NCRS) project is evaluating ranching practices designed to stop overgrazing associated with large pastures and open-water wetlands.

NE rancher Ron Pinney, one of five participants in the *Whole Farm and Ranch Program*, fenced off lakes, streams and wetlands to prevent water pollution on his 4,200-acre ranch near Ainsworth. Pinney also replaced his windmills with a photovoltaic system, which relies on solar radiation to generate electric power more efficiently -- and year-round -- for the ranch's water system.

Gene Mack, of the U.S. Fish and Wildlife Service, said the project is the first in the state to try a holistic approach to conservation. In addition to protecting the ranch's water resources, the changes benefit Pinney by extending operations year round and using grass more efficiently.



Traditional" ranching and farming practices in the West "are increasingly being challenged on environmental grounds, often by waves of newcomers," reports the *Washington Post*. "Urban expatriates who telecommute by modem tend to view cattle-trampled streams, timber clearcuts and mining scars as threats to salmon, wildlife and aesthetics rather than essential threads in the West's economic fabric." In particular, cattle -- "once almost universally viewed as a revered symbol of western expansion and settlement" -- are now often viewed as detrimental to the environment.

The article centers on clean-streams activist Patrick Shipsey of John Day,

OR, who in 10/96 shot eight of his neighbor's cattle that he said had repeatedly trespassed on his stream front property. The slaughter "contributed significantly to [the] overwhelming defeat" of a ballot measure that called for a ban on livestock within 100 ft. of streams that don't meet water quality standards.

"Inject[ing] a new argument into the grazing wars in the West," an OR environmentalist is asserting that cattle grazing contributes to "catastrophic forest fires." In the 5/97 issue of *Conservation Biology*, ecologist Joy Belsky of the *Oregon Natural Desert Association* counters the widely held belief that the "forest health problem" results from years of suppressing forest fires. Belsky argues that forests were "sick" long before officials began fighting fires.

Instead, Belsky argues that cattle and sheep grazing over the last century has eliminated the grasses that once carried helpful, "low-intensity fires" throughout the forests. The loss of grasses also makes it possible for more fire-prone seedlings to sprout.

However, while Tom Quigley, science team leader for the feds' *Columbia Basin Ecosystem Management project*, agrees that grazing has had an impact, he believes fire suppression and selective logging are the leading forest-health problems, not modern grazing practices.

Sources: Omaha World-Herald 4/16/97, By Line articles by Tom Kenworthy, Washington Post, 3/26/97 and Jeff Barnard, AP/Salt Lake Desert News, 5/12; and Greenwire Vol. 6, No. 220, 238 and Vol. 7, No. 9

Hog Waste Update

Large-scale livestock facilities, especially those specializing in swine, have moved into the midwest at a rapid pace. Critics object to the ammonia and hydrogen-sulfide gas produced by hog manure as it decomposes in waste lagoons, and they say groundwater is threatened by the practice of mixing manure

with water and spraying it on fields as fertilizer. Large fish kills have resulted from waste-contaminated runoff near large-scale hog farms in IA, MO and NC.

In IL the Pollution Control Board helped write a new law regulating hog wastes, but the IL Dept. of Agriculture — which normally promotes the agricultural industry — will enforce it. Backers of the law say it struck a good balance between the environment and industry concerns, and might even be too tough on small farmers. But critics have formed a group called *IL Citizens for Responsible Practices* to study the issue and recommend changes to legislators this fall.

A recent *University of Iowa* study showed a pattern of health ailments in residents living within two miles of one particular large-scale swine operation. In late May IA Gov. Terry Branstad (R) signed a law that will toughen penalties for livestock producers who repeatedly violate environmental laws. State legislators said more sweeping hog-lot measures will be debated next year.

Murphy Family Farms, the world's largest hog producer, recently applied for a permit to open its first operation in KS. The proposal sparked debate over whether the KS Dept. of Health and Environment "has the staff and the willingness" to monitor large-scale hog farms and protect water supplies from hog wastes.

Meanwhile in VA, "In one of the largest cases brought under the federal Clean Water Act," a federal judge has found Smithfield Foods Inc. liable for dumping illegal levels of hog waste into VA's Pagan River from 1991 to 1996. U.S. District Judge Rebecca Beach Smith in Norfolk, VA, ruled on 6/2 that the pork producer can be fined up to \$133 million for more than 160 reporting violations and as many as 5,330



pollution violations under federal law. Smith dismissed the company's argument that VA, not the US EPA, "is the proper policer of pollution in the state." Smith also criticized VA's environmental laws "as virtually toothless," remarking that the state can impose civil fines only with the polluter's approval.

The US EPA sued Smithfield in 12/96, arguing the state was "not doing the job" despite repeated violations by Smithfield. EPA Mid-Atlantic Regional Administrator W. Michael McCabe called the decision "a complete, unqualified victory." But Smithfield attorney Anthony Troy said the firm "in all likelihood" will appeal the ruling.

Meanwhile, some Westerners believe resistance from Midwestern communities is pushing large hog operations into CO, WY and UT, where state regulations are comparatively "lax." CO, for example, does not require hog farms to have permits, says Melissa Elliot of the *Rocky Mountain Farmers Union*. Mary Weber, who operates a small livestock operation in Wheatland, WY, says small Western towns "are so eager" for the financial benefits of hosting large hog facilities that they do not explore the long-term consequences.

Sources: Greenwire Vol. 7, No. 18; and National Journal's GREENWIRE, The Environmental News Daily, 6/3, 6/10, 7/8, and 7/15/97

ESA Update

As part of a court settlement with environmental groups, the Interior Department released a formal version of its "no surprises" policy in late May. Under that policy, landowners that meet "certain conditions" of habitat-conservation plans are exempted from more rigid prohibitions under the Endangered Species Act (ESA) for activities such as logging, mining and grazing.

Eight environmental groups had sued to block the policy in 11/96, saying it did not provide enough protections for species, especially if their status changes due to natural disasters or

further habitat loss.

Meanwhile, more than 70% of those responding to a recent poll, support amending the ESA, up from 42% in a 1995 survey. According to the survey sponsored by the *American Forest & Paper Association* (AF&PA) and conducted by the GOP polling firm, *Market Strategies Inc.*, respondents cited high costs and under performance as the major reasons for modifying the ESA. More than 80% of respondents said the key to improving the act lies in making it more inclusive by increasing participation by scientists, private landowners and state and local governments. Eighty-five percent want the ESA amended to provide incentives for landowners to protect species on their property, while 77% said state governments should have a larger role in the identification and protection of species. The poll surveyed 600 adults from May 15-18; the margin of error is +/- 4.2%.

In Congress Sen. Craig Thomas (R/WY) on 6/4 said he anticipates an attempt to reform the ESA by year's end, but he doesn't think the reform will "go as far perhaps as some would like." In an interview, Thomas predicted a bill that would give property owners incentives to protect endangered species.

Meanwhile, Senator Dirk Kempthorne (R/ID) has introduced legislation that would provide tax breaks for property owners who voluntarily protect wildlife. Kempthorne's plan calls for three types of tax breaks:

- larger charitable deductions for property owners who donate land for conservation purposes to government or private groups;
- deferral of estate taxes on property where owners have agreed to set aside land for at least 15 years to preserve endangered species habitat; and
- a lower capital gains tax on property sold to government or private bodies for conservation purposes.



Kempthorne was joined by Sens.

John Chafee (R/RI), Max Baucus (D/MT) and Harry Reid (D/NV) in mid-June in asking Senate Finance Committee Chair William Roth (R/DE), and ranking member Patrick Moynihan (D/NY) to include the measures in the Senate tax-cut bill. Mike Senatore of the *Defenders of Wildlife* said the proposals are "great for species and good for private property owners as well." Property-rights advocates lent their qualified support, as David Almasi of *Defenders of Property Rights* said the package was "a step in the right direction," but that it was "no substitute for paying people just compensation for taking their property".

Kempthorne is also working on a more comprehensive bill to reform the ESA. Interest groups on both sides say Kempthorne's (R/ID) bill "stands a better chance of passage than any offered since the act expired in 1992." Kempthorne is expected to introduce the bill by 8/97, perhaps earlier. In a move that "helped break the impasse" in negotiations with the Clinton administration, Kempthorne this year dropped a provision that would have compensated landowners whose property value is reduced by environmental restrictions. Instead, Kempthorne plans to offer the provision -- which House Resources Committee Chair Don Young (R/AK) favors -- in a separate bill.

Environmental and industry groups have received copies of Kempthorne's draft ESA legislation circulated in 1/97, but have been "kept out" of negotiations on the bill. Kempthorne has been joined in closed-door talks with Sens. John Chafee (R/RI), Max Baucus (D/MT) and Harry Reid (D/NV), and several Clinton administration officials, including Interior Secretary Bruce Babbitt and White House Council on Environmental Quality Chair Katie McGinty. Some participants insist that secrecy is necessary to "lower the level of rhetoric on such a polarized issue." Senators not involved in the talks are expected to defer to their colleagues when a bill is introduced. Baucus said, "If we reach agreement, the four of us, I think

there will be overwhelming support."

Several environmental groups said that "they would withhold judgment" but that they are prepared to reject the bill if it looks too much like Kempthorne's original draft. But some said the bill would be a "vast improvement" over legislation Kempthorne introduced in the 104th Congress. Industry groups have supported Kempthorne's bill, "saying it creates an acceptable middle ground".

Sources: Greenwire Vol. 7, No. 20; National Journal's GREENWIRE, The Environmental News Daily, 6/6, 6/16, 6/17, and 6/26/97; AF&PA News Release 6/16; and St. Louis Post-Dispatch, 6/6/97

Toxic Wastes/Fertilizers

"Toxic" wastes containing heavy metals, chemicals and radioactive substances are being recycled as fertilizer and spread over farmland across the nation, according to a two-day feature (7/3-4/97) by Duff Wilson in the *Seattle Times*. For example, in Moxee City, WA, an unidentified byproduct from two OR steel mills is poured from rail cars into silos at *Bay Zinc Co.* under a federal hazardous-waste storage permit. The powder is then emptied from the silos for use as fertilizer according to the *AP/San Francisco Chronicle/ Examiner* online (7/6/97).



Bay Zinc President Dick Camp said, "When it goes into our silo, it's a hazardous waste. When it comes out of the silo, it's no longer regulated. The exact same material. Don't ask me

why. That's the wisdom of the EPA" (Knight-Ridder/Baltimore Sun, 7/6).

Until recently, the WA Dept. of Agriculture monitored fertilizers only to see if they contained advertised levels of beneficial substances. But now the state is testing a cross-section of fertilizer products to see if they threaten crops, livestock or people.

Ali Kashani, who oversees fertilizer regulation in WA, said there is no law anywhere in the U.S. that regulates concentrations of heavy metals in substances destined to be used as fertilizers. Federal and state governments "encourage the recycling," which saves money for industry and space in hazwaste landfills (AP/San Francisco Chronicle/Examiner online, 7/6).

Source: National Journal's GREENWIRE, The Environmental News Daily, 7/7/97

Miscellaneous River Issues

Alabama Lake Pollution - Half of Alabama's lakes have the highest levels of nutrient pollution ever recorded, according to recent tests. State environmental officials say that nearly all AL lakes have areas where contact with water is unsafe (USA Today, 7/8). Source: National Journal's GREENWIRE, The Environmental News Daily, 7/10/97

Barge Dumping - A federal judge, on 7/2, threw out some of the convictions that the federal government had obtained against employees of a barge and towing company accused of illegal dumping in the Ohio and Mississippi rivers. M/G Transport Services Inc. and its employees were convicted in 1995 for dumping bilge slops, burned wastes and industrial garbage from towboats between 1971 and 1992. U.S. District Judge Herman Weber left intact two of the convictions against the company and J. Harschel Thomassee, who retired as a company VP in 1992. Those convictions were for conspiracy to violate the Clean Water Act and failure to report a spill to

the Coast Guard. But Weber agreed with defense arguments that the evidence did not support guilty verdicts on charges of dumping pollutants without a permit. The ruling cleared the company, Thomassee and two towboat captains on the latter charges. Weber's ruling was a "setback" to the Justice Dept., which spent two years investigating the case. The department is considering whether to appeal, according to DOJ spokesperson Bill Brooks (John Nolan, AP/Cleveland Plain Dealer, 7/5). Source: National Journal's GREENWIRE, The Environmental News Daily, 7/9/97

Double-Hulled Vessels - The first double-hull petroleum vessel built in the U.S. under the 1990 Oil Pollution Act will be launched this fall, ushering in "a new era in ship technology and environmental safety." The technology incorporated into the 45,000-ton *American Progress* was developed after the 1989 "nightmare" of the Exxon Valdez. The *American Progress* is "a ship



wrapped inside a ship" that puts a "void space between the cargo and the sea," according to Ray Johnson, a Naval architect with *Mobil Corp.*, which owns the ship. The double hull also eliminates oily ballast water because the protective space, not the hull itself, is filled with seawater for return trips. The technology is "critical," but expensive. A Maritime Policy and Management report states that the benefits of such a design are only 20% of their cost. The *American Progress* will transport gasoline from TX to Tampa and Fort Lauderdale for *Mobil*, which wanted "added insur-

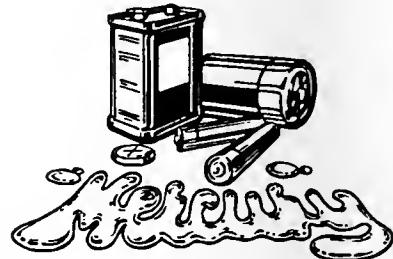
ance" against spills along FL's "environmentally sensitive coastline" (Kurt Loft, Tampa Tribune, 7/14). Development of similar technology for barges has been of interest on the Upper Mississippi for a number of years. This interest and its accompanying legislative efforts have been spear-headed by the *Izaak Walton League of America* and former Congressman Steve Gunderson (R/WI). Source: National Journal's GREENWIRE The Environmental News Daily, 7/17/97

Lake Pontchartrain Algae Blooms - LA health officials have warned that polluted Mississippi River water released into Lake Pontchartrain this spring has caused an algae bloom that can make people sick. The lake has been "plagued" by the blue-green, toxin-producing algae since late May, after the Army Corps of Engineers opened the Bonnet Carre Spillway to divert Mississippi River floodwaters. During a 31-day period, more than three trillion gallons of river water flowed into the lake, increasing nutrient loads of nitrogen and phosphorus and causing the algae bloom. The toxin hepatotoxin produced by the algae can cause severe gastrointestinal problems when ingested, according to state health officer Louis Trachtman. The recent health concerns "added to the dire consequences predicted by environmental groups" when the spillway was opened in 4/97 (Chris Gray, New Orleans Times-Picayune, 6/24).

While lake users overall "don't seem too concerned" about the bloom, fishers and shrimpers are worried that the algae may lead to oxygen depletion and cause fish kills (Monje/Liberto, New Orleans Times-Picayune, 6/25). Source: National Journal's GREENWIRE, The Environmental News Daily, 7/1/97

LA Mercury Testing - A coalition of environmentalists on 6/10 urged LA Gov. Mike Foster (R) to be "more aggressive in protecting people from mercury contamination in fish." The group, which includes the *LA Wildlife*

Federation, the *Sierra Club* and the *LA Audubon Council*, asked Foster to accelerate fish sampling under the oversight of a task force and state coordinator and to improve public notification methods. State Dept. of Environmental Quality records show that bass in 27 large water bodies -- including "some of the state's most popular fishing spots" -- have mercury contamination concentrations



greater than 0.5 ppm, the level at which the state acts to protect human health. Yet fish in "most waterways" remain untested for mercury, records indicate. Even when officials do find high mercury levels in fish, "it takes months, sometimes more than a year from the time initial samples are taken until the public is informed." *Audubon Council's* Barry Kohl said the state needs to create a strategic plan for mercury testing with specific goals, and provide long-term funding (Bob Anderson, Baton Rouge Advocate, 6/11). Source: National Journal's GREENWIRE The Environmental News Daily, 7/16/97

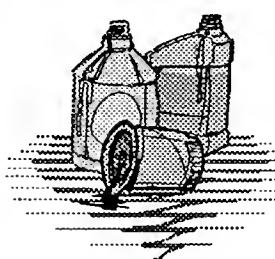
LA Wetland Loss/Navigation - Environmentalists and federal officials are at odds over how to handle "one of the worst" regions of wetland loss in coastal LA, which has been created by an "ever-widening" navigation channel cut by the Army Corps of Engineers (COE). All agree that the Mississippi River Gulf Outlet (MRGO), cut in the 1950s and 1960s, has caused the massive destruction of wetlands in St. Bernard Parish. But COE officials have rejected the demands of some environmentalists and local property owners to close the channel to shipping, and to rebuild the protective ridges that once kept salt water from reaching and destroying freshwater marsh vegetation. For now, the COE is restoring marshland using

dredged sediment from the MRGO channel and is trying to stop erosion by securing channel banks with rocks. Congress has authorized funds for the COE to put rocks on just nine of the 76 miles of channel banks. Closing the MRGO would require port officials to move shipping docks from the channel to the Mississippi River, at an estimated cost of \$479 million. An alternate, less drastic plan backed by some environmentalists would modify a lock system so ships could avoid the MGRO, allowing it to close (Bob Anderson, Baton Rouge ADVOCATE, 5/18). Source: Greenwire Vol. 7, No. 17

MT Pipeline Spill - Jim Nokes, a Conoco VP, on 6/24 met with Crow tribal leaders as company crews worked to clean up a 75,600 gal. oil spill from a ruptured Conoco pipeline on the tribe's Wyola, MT, reservation. The US EPA is expected to ask Conoco to monitor groundwater for contamination from the pipeline break, which is believed to have occurred on 6/20 (Clair Johnson, Billings Gazette, 6/25). Source: National Journal's GREENWIRE, The Environmental News Daily, 6/26/97

OH Fish - A new report by the OH EPA reveals that fish with "highly or extremely elevated levels of contaminants" have been found in nearly 20% of river and stream segments sampled since 1994. The main pollutants detected--PCBs, mercury and lead--were found in all but 178 of the 3,118 mi. of waterway sampled. Fish with deformities and lesions are still present in major streams, but

"their numbers appear to be in decline." Although OH has made "massive investments" to clean the state's waterways, the OH EPA said half of the state's rivers and streams remain "impaired" and 712 miles cannot support aquatic life. The OH Dept. of Health said that new statewide fish consumption



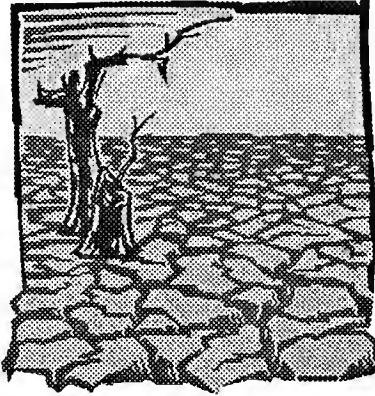
advisories are being prepared as a result of the study (Bill Sloat, Cleveland Plain Dealer, 6/21). Source: National Journal's GREENWIRE, The Environmental News Daily, 6/25/97

Platte River Agreement - Following three years of talks, CO, NE and WY on 5/22 tentatively agreed with the Interior Dept. (DOI) on how to protect endangered species along the Platte River. The preliminary accord addresses wildlife issues using a basin-wide approach, balancing habitat protections with the needs of water users in the three states. The U.S. Fish and Wildlife Service has pushed for increased flows along the Platte, and the agreement will send an additional 130,000 acre feet of water into central NE to maintain habitat for the whooping crane, least tern, pallid sturgeon and piping plover. The agreement also increases funding for habitat improvement and "simplification" of the Endangered Species Act review process for water-use activities. The DOI plans to finalize the agreement in coming weeks (Cindy Brovsky, DENVER POST, 5/23). Source: Greenwire Vol. 7, No. 18

Potomac River Wetlands - The Army Corps of Engineers (COE) on 6/26 granted a "key federal wetlands permit" for a proposed 4,600-home development in southern MD on "one of the largest expanses of woodland remaining along the Potomac" River. The decision to grant the permit to Seattle-based *Legend Properties Inc.* "removes a major hurdle to construction," which could begin this summer, and it is a "blow to environmental groups" that tried to protect the property from development. But the *Sierra Club's* Joy Oakes says the campaign "is not over" (Frank Roylance, Baltimore Sun, 6/27). Environmentalists vowed to file suit in the U.S. District Court in Washington, D.C. "to force a detailed study" (Todd Shields, Washington Post, 6/27) and said they will press their case with MD Gov. Parris Glendening (D). The development's proponents say it has passed the necessary environmental tests. "The applicant has really gone out of his way to avoid wetlands," said Randall Inouye of the COE's Baltimore District. But Ronald Young, of MD's planning office, "said it was not clear

whether" it will meet the requirements of the state's "smart growth" law, enacted this year to stem suburban sprawl (Roylance, Baltimore Sun). Source: National Journal's GREENWIRE, The Environmental News Daily, 7/5/97

TX Water Plan - The TX Legislature on 6/1 "overwhelming[ly]" passed a bill that for the first time requires comprehensive planning to address drought, population growth and environmental protection. Gov. George W. Bush (R) is expected to sign the bill that "radically revises" current water law, forcing cities, water districts and local governments to work together to develop conservation plans. And in its "most hotly contested" provision, the bill creates major blocks for future transfers of water between river basins. The



legislation also increases protection for freshwater flows to bays and estuaries and provides \$1 billion to upgrade drinking-water systems and regulate conservation. Craig Pedersen, of the TX Water Development Board, said the bill is "a major, major step forward for state water policy" (Ralph Haurwitz, Austin American-Statesman, 6/2). An Austin American-Statesman editorial said the bill "may be this Legislature's finest legacy" (6/3). Houston city officials are finalizing a \$25 million water conservation proposal they say could reduce demand more than 7% by 2006. The plan's key feature is the "lost-and-unaccounted-for water program," which traces and corrects illegal water taps and leaks in the city water system (Julie Mason, Houston Chronicle, 5/30). Source: Greenwire Vol. 7, No. 20

VA River Standards - The VA Dept. of Environmental Quality (DEQ) will drop most of its "contentious" proposals on pollution discharges into state waterways after reviewing new studies and receiving "a flood of letters." The DEQ originally proposed lifting the ban on chlorine discharges in waters containing endangered species, believing the regulation placed an "unnecessary and costly burden on sewage treatment plants." The agency also proposed weakening the standard for fecal bacteria and allowing concentrations of the "toxic boat paint" TBT to exceed current limits in some cases. The DEQ now suggests retaining the ban on chlorine, maintaining current regulations on fecal bacterial discharges, and enacting a new standard for TBT that would make all violations illegal. Jeffrey Corbin of the *Chesapeake Bay Foundation* said that while his group does not support all of the DEQ's latest suggestions, in sum they are "more good than bad." (Rex Springston, RICHMOND TIMES-DISPATCH, 5/26). Source: Greenwire Vol. 7, No. 20

WV Blackwater Canyon Sale - The sale of Blackwater Canyon -- a 3,000-acre area within the Monongahela National Forest in WV -- to a logging company in 2/97 has re-energized efforts by conservationists to preserve the canyon, which has been "advertised as the crown jewel of the state." The sale came after years of unsuccessful attempts by the Arlington, VA-based *Conservation Fund* to buy the land from *Allegheny Power Co.* (Mary Furbee, WASH. POST, 5/25). Source: Greenwire Vol. 7, No. 20

WI Nonpoint Source Pollution - A WI legislative committee on 5/23 backed a "fragile compromise" that would lead to the regulation of nonpoint-source water pollution, including runoff from feed lots and manure storage areas. The proposal also would limit farm animals' access to state waterways, "but only if tax money is available to help pay for those improvements" (Steven Walters, MILWAUKEE JOURNAL-SENTINEL, 5/24). Source: Greenwire Vol. 7, No. 20

Boaters Seek Par w/Fisheries

A sportsman's coalition has asked Congress to put boating safety on a par with fisheries programs in distributing federal excise taxes collected on sport fishing products and motor-boat fuels. The *American League of Anglers and Boaters (ALAB)*, a group that endorses the "user-pay, user-benefit" taxes, presented recommendations for revising the *Aquatic Resources Trust Fund*, also called the *Wallop-Breaux Trust Fund*, which distributes the tax revenues to the states.

The fishing tackle excise tax, established by the *1950 Sports Fisheries Restoration Act*, is administered by the U.S. Fish and Wildlife Service. States count on it for coastal wetlands restoration, recreational boaters' waste treatment facilities, and boating safety programs, said Derrick Crandall, co-chairman of the anglers and boaters group. The sportsmen met with members of Congress at breakfast at the Capitol.

While the Sports Fisheries Act has permanent budget authority, which means it does not have to be reauthorized in each budget cycle, boat safety grants by the Coast Guard from motor-boat fuel excise taxes are subject to annual appropriations. The ALAB wants the excise taxes to continue going to the *Aquatic Resources Trust Fund* and expand federal matching grants to state boating safety programs. They support providing \$70 million annually in two parts -- \$55 million under permanent budget authority, as proposed by the Clinton administration in its proposed *Highway Trust Fund* reauthorization bill (NEXTEA) and \$15 million under the *Clean Vessel Act*.

The coalition also wants \$5 million a year in permanent budget authority for the Coast Guard's boat safety efforts, \$10 million a year for state marine sanitation pump-out projects, \$10 million a year for boating infrastructure and \$15 million a year for

state boating safety grants. In fiscal year 1999, the states' trust funds would share \$65 million from the boat safety fund and \$233.3 million from the Sports Fishing Fund. About 15% of the sports fishing money goes to boating programs.

Source: White Paper Database, By-Line Article by Tom Bryan, Federal Document Clearing House, Inc., 5/20/97

Comparing Macroinvertebrate Monitoring Data

A recently completed WI Water Resources Coordination Project, a pilot project of the *Intergovernmental Task Force on Monitoring Water Quality*, compared macroinvertebrate data collected by the U.S. Geological Survey (USGS), the WI Department of Natural Resources (DNR), the U.S. Forest Service (USFS), and volunteers from the *Water Action Volunteer Water Quality Monitoring Program (WAV)*. The outcome of the study is significant for groups seeking to integrate or compare data collected using different sampling methods.

Field staff from each agency and organization sampled the same six streams in the western Lake Michigan drainage basin during three days in May 1995. The sampling effort was carefully coordinated to avoid sampling the same spot twice. In addition, monitors approached sampling locations in a downstream-to-upstream order to avoid capturing organisms dislodged at sites already monitored. Monitors also took care to avoid marginal areas, such as below bridges and near impoundments, where they would be likely to encounter large amounts of silt or vegetation that would sharply influence their results.

After being preserved in the field, most samples were sent to the same lab for analysis. The WAV monitors, however, identified the aquatic macroinvertebrates in their own samples in the field. In addition to collecting and identifying the samples, the monitors made visual observations about watershed qual-

ity and riparian and in-stream habitat. Hilsenhoff's Biotic Index (HBI) was used to analyze the data. The analysis revealed that the macroinvertebrate samples collected by the three agencies interpreted water quality conditions similarly for all six streams.

The HBI estimates water quality based on the tolerance of aquatic macroinvertebrates to organic pollution and resulting reductions in dissolved oxygen. The resulting water quality values showed little variability. The HBI value for each sample collected at a given stream fell within a single unit of the median HBI value for all samples collected at that stream.

Macroinvertebrate samples collected from the same riffle at each stream contained similar taxa, but the number of individuals within the taxa varied. This variation is probably attributable to the difference between sampling methods. For instance, the USGS method of digging into the substrate increased the proportion of taxa from this habitat.

Several USFS samples were dominated by macroinvertebrate taxa not dominant in samples collected by other agencies for the same stream. This result may also be attributable to the sampling method, since the USFS does not limit its monitors to one location. Instead, it requires each monitor to obtain 125 or more individual organisms. As a result, USFS monitors may target certain microhabitats abundant with a particular taxa. An additional bias in this approach may result if monitors choose the larger, more visible organisms in their effort to reach the benchmark.

Net size is another issue. The study showed that WIDNR collected the greatest number of taxa from five of the six streams while the USFS collected the fewest. This difference may be attributed to the fact that the USFS uses a larger mesh size than WIDNR. Another cause could be that WIDNR generally sampled a larger area and may have encountered more

microhabitats.

Visual watershed survey results also varied significantly. No relationship could be found between physical watershed characteristics and the macroinvertebrate communities. Personal bias, differences in observations, and previous knowledge of the site are factors that may have influenced these results.

The study was successful in identifying some limits to sharing macroinvertebrate data collected using different sampling methods. The results suggest that shared monitoring data can accurately determine water quality using robust measures such as the HBI. In contrast, data sharing may not be feasible in cases where information on specific species assemblages is needed. The study makes a strong case for considering differences in field collection methods when comparing data.

Contact: Mike Miller, WIDNR, 101 South Webster Street, Madison, WI 53707, . Phone: (608) 267-2753; fax: (608) 267-2800; e-mail: millema@dnr.state.wi.us. Or the USGS, 6417 Normandy Lane, Madison, WI 53719. Phone: (608) 276-3810.

Source: Nonpoint Source News Notes, April/May 1997, ISSUE #48

Nutria for Lunch?

A new project in LA will try to persuade people to eat nutria, rodents that are "eating away huge areas of coastal marsh." Nutria, which are native to South America, were introduced to LA in the 1950s as a way to boost fur production. But a sagging fur market is contributing to "an overflow population" of nutria, which devour the vegetation on marsh lands until they erode and "disappear into open water." A 1996 study showed that 100,000 acres of LA wetlands had been damaged by nutria.

The \$2.1 million project, being overseen by the LA Dept. of Wildlife and Fisheries, calls for "a demonstration that nutria meat can be good to eat," a plan to develop recipes and pro-

mote and market the meat, and a study on the nutrias' impact on coastal marshes. The project is funded by the federal Breaux-Johnston Act, which provides \$30 million a year to LA to combat wetlands losses. Residents of south LA, who refer to the animals as "nutria rats," may need a "major attitude adjustment" to buy into the project (Dallas Morning News, 7/7).

Meanwhile, the LA Dept. of Natural Resources (DNR) is also using funds from the Breaux-Johnson Act to launch a "national awareness and education campaign ... about the value of LA's coastal wetlands." The DNR has signed a year-long contract with New Orleans-based *Montgomery Stire Davis*, which will produce media kits, materials for school children, an Internet Web site, and a directory of support groups (Bill McMahon, Baton Rouge Advocate, 7/8).

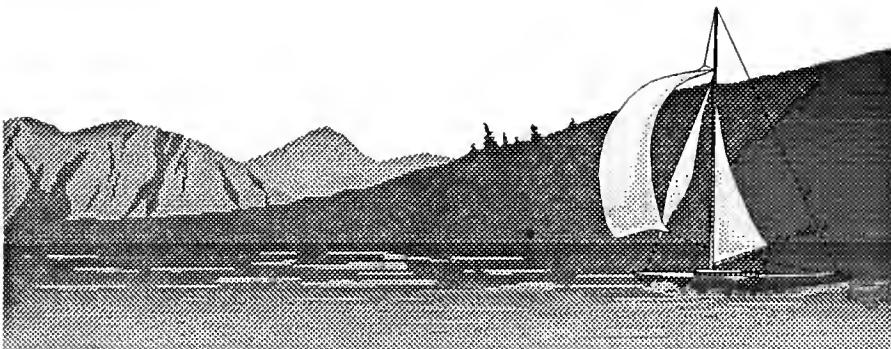
New federal estimates of LA coastal wetlands losses from 1978 to 1990 indicate a loss of about 35 mi^2 a year, which "equates to a total 12-year loss of about 420 mi^2 ," or roughly twice the size of the greater New Orleans area (USGS/ BRD release, 7/7).

Source: National Journal's GREEN-WIRE, The Environmental News Daily, 7/9/97

Watershed Protection Saves \$

The nearly \$140 billion that the US EPA estimates will be needed for drinking-water infrastructure over the next 20 years could be "significantly reduced" by modest investment in watershed protection, according to a recent report by the *Trust for Public Land* (TPL). The report explores case studies of states and cities that have invested in watershed preservation, as well as several that have not.

In the case of metro Atlanta, local communities have had to abandon eight water supplies over the past 70 years due to watershed degrad-



tion stemming from development, according to the report. In contrast, TPL says that New York City, by investing \$1.5 billion to protect surrounding watershed land, will save between \$6-8 billion in filtration facility construction costs, in addition to \$300 million annually in operating costs. Even with such savings estimates, TPL says the EPA "did not even consider" watershed protection as an option in a recent survey on drinking water supply needs.

The report singles out NJ as a state that has adopted a "complete reversal of thinking" on water management, shifting from an emphasis on increasing capacity in the 1980s to a current focus on watershed protection and aquifer recharge.

According to the *Centers for Disease Control*, nearly one million Americans fall ill each year and 900 die from drinking contaminated water (TPL release, 5/6).

U.S. Geological Survey Director Gordon Eaton and six MI universities have announced a "major initiative" to protect that state's drinking water supply. The state has spent \$73.7 million cleaning up ground-water contamination since 1985, according to the *MI Environmental Council* (George Weeks, DETROIT NEWS, 5/4).

Source: Greenwire Vol. 7, No. 4

EPA Watershed Training

The U.S. EPA has initiated a new program to provide watershed ap-

proach training to local, state, tribal, and federal officials and private practitioners of watershed management. The *Watershed Academy* provides short courses and related reference materials about watershed processes, functions, and management techniques. Training courses are offered several times a year, as funding permits, usually in EPA regional offices or other central locations.

Doug Norton, an environmental scientist with the Watershed Branch of EPA's Office of Water, says the program's message and courses center on elements of the watershed approach that are important to the successful management of a watershed: communications, science, and organizational management elements. Courses currently being offered include:

- The Statewide Approach to Watershed Management (2 days);
- The Executive Overview of the Watershed Approach (1 day)
- Principles of Watershed Protection and Management;
- Getting in Step: a Pathway to Effective Outreach in Your Watershed; and
- Watershed Management Tools.

In addition to its own courses, the Academy maintains an Internet Catalog of Watershed Training Opportunities containing information about dozens of other watershed-oriented training courses offered by local, state, and federal agencies, and private organizations. Norton said plans are underway for a distance learning program called *Academy 2000*, which will permit any watershed manager or interested party with Internet access to participate in an Academy work-

shop. The proposal calls for 20-50 modules, each requiring 1-2 hours running time. The planned format includes a class lecture with visuals and accompanying narrative.

The Academy also cosponsors special training events on different aspects of the watershed approach as resources permit, and it is also involved in the *Interagency Watershed Training Cooperative*, an ongoing multiagency effort, to make better use of the resources available for training by jointly developing courses, sharing scientific expertise, facilities, and other resources. Initial efforts have involved EPA, the Forest Service, Bureau of Land Management, NRCS, Army Corps of Engineers, and Fish and Wildlife Service.

Contact: Doug Norton, fax: (202) 260-1977; or visit the Watershed Academy Web site: <http://www.epa.gov/OWOW/watershed/wacademy.htm>.

CITYgreen

CITYgreen is an urban planning tool from *American Forests* that helps map and measure the value of trees in terms of summer energy savings, stormwater management, carbon storage, and urban wildlife habitat. For information and a demo disk, call (202) 667-3300, ext 227, or visit <http://www.amfor.org>

Working Trees

Working Trees for Communities is a color brochure developed by the *National Agroforestry Center* that illustrates planting practices to protect natural resources, diversify the environment, and conserve energy. To obtain copies, contact Kim Issacson, National Agroforestry Center, USDA Forest Service, Rocky Mountain Station, USDA NRCS, east Campus-University of Nebraska-Lincoln, Lincoln, NE 68583-0822. Phone: (402) 437-5178: 437-5712.

Greenlines

Greenlines is a new, one page publication, offered 5 days a week of news around the world regarding wildlands and wildlife. Greenlines is

published by GREEN the Grassroots Environmental Effectiveness Network. The publication is delivered free over the Internet. To subscribe, send the message "subscribe Firstname Lastname" from your e-mail

account to listproc@envirolink.org. If you have any questions or problems contact: GREEN at greemomfp@defenders.org or call (202) 682-9400 x236.

Meetings of Interest

Aug. 24-28: 127th Annual Meeting of the American Fisheries Society, Monterey, CA. Contact: Paul Brouha, (302) 897-8617, Ext. 209.

Sept. 19-20, 1997: "Clean Enough?" A Conference on Mississippi River Water Quality, University of New Orleans. Panels and Talks Include: Historical Ecology of the Mississippi River, Freshwater Diversions & Coastal Restoration, New Orleans' Drinking Water, Fish Tissue & Contaminants, Algal Blooms & Hypoxia, Bayou Lafourche. Sponsoring Organizations include: Coalition to Restore Coastal LA, Gulf Restoration Network, Lake Pontchartrain Basin Foundation, New Orleans Mayor's Office of Environmental Affairs, Tulane Environmental Law Institute, and University of New Orleans. For More Information, call (504) 836-2215

Sept. 23: Restoration Forum for River Corridors and Wetlands, Springfield Hilton, Springfield, VA. A one plus-day workshop to broaden and strengthen relationships among river restoration part

ners. Contact: Stephanie Peters (Wetlands Division), U.S. EPA, 401 M Street, SW (4502F), Washington, D.C. 20460, (202) 260-7946

Oct. 4-8: 51st Annual Southeastern Association of Fish and Wildlife Agencies Conference, The Medallion Hotel, Oklahoma City, OK. The conference theme is "Partners for the Future of Fishing, Hunting and Conservation -- Stakeholders, Industries and Resource Agencies Working Together". Also, a panel discussion, "Marketing Recreational Sport Fishing -- Whose Job Is It?" is planned. Contact: 1997 SEAFWA Registration, Oklahoma Dept. of Wildlife Conservation, 1801 N. Lincoln, Oklahoma City, OK 73105, (405) 522-4357.

Oct. 7-9: Conference on the Management of the Illinois River System. Holiday Inn City Centre, Peoria, IL

Early Nov. 1997: Ecological Restoration as a Key Element of Regional Conservation Strategies - 9th Annual Society for Ecological Restoration Conference , Ft. Lauderdale, FL. Contact: SER, 1207 Seminole Highway, Suite B, Madison, WI 53711, (608) 262-9547

Dec. 6-10: Symposium on the Effects of Riparian Land-Uses on Aquatic Ecosystems. Milwaukee, WI. Contact: John Lyons, WI Dept. of Natural Resources, 1350 Femrite Dr., Monona, WI 53716-3736, (608) 221-6328, FAX (608) 221-6353, lyonsj@dnr.state.wi.us.

Dec. 7-9, Midwest Fish & Wildlife Conference - Managing Natural Resources: Integrating Ecology and Society. Milwaukee, WI

May 3-6, 1998: Watershed Management: Moving from Theory to Implementation, Denver, CO. Water Environment Federation. (703) 684-2400.

May 23-28, 1998: First International Ictalurid Symposium - Catfish 2000, Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180, (573) 751-4115, FAX (573) 526-4047.



Congressional Action Pertinent to the Mississippi River Basin

Agriculture

H.R. 246 and H.R. 247 (Peterson, D/MN) extension of existing and expiring contracts under the Conservation Reserve Program.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the Food Security Act of 1985 and the Clean Water Act to permit

the unimpeded use of privately-owned crop range and pasture lands that have been used for the planting of crops or the grazing of corn in at least 5 of the preceding 10 years.

H.R. 861 (Moran, R/KS) authorizes a farmer or rancher whose bid for re-enrollment of land into the Conservation Reserve is rejected to

unilaterally extend the contract for a final year.

H.R. 1185 (Minge, D/MN) to ensure that land enrolled in the land conservation program of the state of MN known as Reinvest in MN (RIM) remains eligible for enrollment in the Conservation Reserve Program upon the expiration of the RIM contract.

Brownfields

H. R. 1396 (Rothman, D/NJ) to assist states and local governments in assessing and remediating brownfield sites and encouraging environmental clean-up programs.

H.R. 1462 (Visclosky, D/IN) to authorize the EPA Administrator to establish a pilot project providing loans to states to establish revolving loans for the environmental cleanup of brownfield sites in distressed areas that have the potential to attract private investment and create local employment.

Fish and Wildlife

S. 361 (Jeffords, R/VT) amends the Endangered Species Act to prohibit the sale, import, and export of products labeled as containing endangered species.

S. 491 (Ford, R/KY) to amend the National Wildlife Refuge System Administration Act of 1966 to prohibit the Fish and Wildlife Service from acquiring land to establish a refuge of the National Wildlife Refuge System unless at least 50% of the land owners in the proposed refuge favor the acquisition.

S. 751 (Shelby, R/AL.) to protect and enhance sportsmen's opportunities and conservation of wildlife.

H.R. 374 (Young, R/AK) amends the Sikes Act to enhance fish and wildlife conservation and natural resources management programs.

H.R. 478 (Herger, R/CA) amends the Endangered Species Act of 1973 to improve the ability of individuals and local, state and federal agencies to comply with that act in building, operating, maintaining or repairing flood control projects.

H.R. 752 (Chenoweth, R/ID) amends the Endangered Species Act of 1973 to ensure that persons that suffer or are threatened with injury resulting from a violation of the act or a failure of the Interior Secretary to act in accordance with that act have standing to commence a civil suit on their behalf.

H.R. 1155 (Fazio, D/CA) to exempt certain maintenance, repair and improvement of flood control facilities in CA from the Endangered Species Act.

H.R. 1718 (Cunningham, R/CA) to protect and enhance sportsmen's opportunities and enhance wildlife conservation.

Flood Insurance

H.R. 230 (McCollum, R/FL) to ensure that insurance against the risk of catastrophic natural disasters, such as hurricanes, earthquakes, floods, and volcanic eruptions, is available and affordable, and to provide for expanded hazard mitigation and relief.

Forests

S. 977 (Robert Torricelli, D/NJ) and (John Kerry, D/MA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 to ban clearcutting and strengthen preservation on federal lands, and designate ancient forests, roadless and other areas where no logging may occur.

H.R. 101 (Baker, R/LA) amends the National Forest Foundation Act to extend and increase the matching funds authorization for the foundation, to provide additional administrative support to the foundation, to authorize the use of investment income, and to permit the foundation to license the use of trademarks, trade names, and other such devices to advertise that a person is an official sponsor or supporter of the Forest Service or the National Forest System

H.R. 1376 (Eshoo, D/CA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 and related laws to strengthen the protection of biodiversity and ban clearcutting on federal lands and to designate certain federal lands as Northwest Ancient Forests, roadless areas, and special areas where logging and other intrusive activities are prohibited.

H.R. 1861 (Hinchey, D/NY) amends the Forest and Rangeland Renewable Resources Planning Act of 1974, the Federal Land Policy and Management Act of 1976, the National Wildlife Refuge System Administration Act of 1966, the National Indian Forest Resources Management Act, and title 10 of the U.S. Code to strengthen the protection of native biodiversity and to place restraints upon clearcutting and certain other cutting practices on U.S. forests.

H.R. 2127 (Frank Riggs, (R/CA) to streamline Forest Service operations by contracting out some services-connected with planning and implementing programs in national forests.

Government Affairs

S. 34 (Feingold, D/WI) to phase out federal funding of the Tennessee Valley Authority.

Senate Environment Committee held a hearing June 10 on the relationship between the federal and state governments in the enforcement of environmental laws.

Grazing

H.R. 547 (Nadler, D/NY) requires the Interior and Agriculture secretaries to establish grazing fees at fair market value for use of public grazing lands.

Land Acquisition

Senate Energy Committee held hearings June 11 on the state-side of the Land and Water Conservation Fund.

H.R. 1487 (Campbell, R/CA) to provide off-budget treatment for one-half of the receipts and disbursements of the Land and Water Conservation Fund, and to provide that the amount appropriated from the fund for a fiscal year for federal purposes may not exceed the amount appropriated for that fiscal year for financial assistance to the states for state purposes.

H.R. 1732 (Kildee, D/MI) to amend the Land and Water Conservation

Fund Act of 1965 to provide for off-budget treatment of the receipts and disbursements of the land and water conservation fund and the accounts established under that act.

Mining

S. 325, S. 326, and S. 327 (Bumpers, D/AR) to repeal the percentage depletion allowance for certain hardrock mines, provide for the reclamation of abandoned hard-rock mines, and ensure federal taxpayers receive a fair return for the extraction of locatable minerals on public domain lands, respectively.

House Resources Committee panel held hearings June 12 on the BLM's hard rock mining bonding regulations.

Parks

S. 301 (McCain, R/AZ) and H.R. 682 (Kolbe, R/AZ) authorizes the Interior Secretary to set aside up to \$2 per person from park entrance fees or assess up to \$2 per person visiting the Grand Canyon or other national parks to secure bonds for capital improvements to the park.

S. 991 (Frank Murkowski A/AK) to make technical changes to Omnibus Parks and Public Lands Management Act of 1996.

Senate Energy Committee on June 12 held oversight hearings to review the preliminary findings of the General Accounting Office concerning a study on the health, condition and viability of the range and wildlife populations in Yellowstone National Park.

H.R. 104 (Bartlett, R/MD) authorizes the private ownership and use of National Park System lands.

H.R. 302 (Skaggs, D/CO) a bill entitled the "Rocky Mountain National Park Wilderness Act of 1997".

H.R. 901 (Young, R/AK) to preserve the sovereignty of the U.S. over public lands by requiring that United Nations heritage designations be subject to congressional approval.

H.R. 2143 (Miller D/CA) to provide

certain escrowed oil and gas revenues be available to improve national parks' visitors facilities.

Public Lands

S. 477 (Hatch, R-UT) amends the Antiquities Act to require an Act of Congress and the consultation with the governor and state legislature prior to establishment by the president of national monuments in excess of 5,000 acres.

S. 691 (Murkowski, R/AK), to require public review and the authorization of Congress for any presidential designations of national monuments, biosphere reserves, and world heritage sites on public lands;

S. 749 (Dorgan, D/ND) to provide for more effective management of the National Grasslands.

H.R. 919 (Miller, D/CA) establishes fair market value pricing of federal natural assets, and for other purposes.

H.R. 1196 (Skaggs, D/CO) to amend the Colorado Wilderness Act of 1993 to extend the interim protection of the Spanish Peaks planning area in the San Isabel National Forest.

Refuges

H.R. 511 (Young, R/AK) to amend the National Wildlife Refuge System Administration Act of 1966 to improve the management of the refuge system.

H.R. 512 (Young, R/AK) to prohibit the expenditure of funds from the Land and Water Conservation Fund to create new National Wildlife Refuges without specific authorization from Congress.

H.R. 952 (Miller, D/CA) to clarify the mission, purposes and authorized uses of the National Wildlife Refuge System and to establish requirements for administration and conservation planning of that system.

House Resources Committee approved on April 30, H.R. 1420, the National Wildlife Refuge System Improvement Act of 1997 reforming the management of the National Wildlife Refuge System. Passed by a vote of 407.

H.R. 1856 (Sexton, R/NJ) to direct the Interior Secretary to conduct a volunteer pilot project at one national wildlife refuge in each U.S. Fish and Wildlife Service region.

Takings

S. 709 (Hager, R/NE) to protect private property rights guaranteed by the fifth amendment to the Constitution by requiring federal agencies to prepare private property taking impact analyses and by allowing expanded access to federal courts.

S. 781 (Hatch, R/UT) to establish a uniform and efficient federal process for protecting property owners' rights under the fifth amendment.

H.R. 95 (Solomon, R/NY) to ensure that federal agencies establish the appropriate procedures for assessing whether federal regulations might result in the taking of private property, and to direct the Agriculture Secretary to report to the Congress with respect to such takings under programs of the Dept. of Agriculture.

Transportation.

S. 468 (Chafee, R/RI) to continue the federal role in developing a national intermodal surface transportation system through programs that ensure the safe and efficient movement of people and goods, improve economic productivity, preserve the environment, and strengthen partnerships among all levels of government and the private sector.

S. 586 (Moynihan, D/NY) to reauthorize the Intermodal Surface Transportation Act of 1991.

H.R. 1609 (Molinari, D/NY) to reauthorize the Intermodal Surface Transportation Efficiency Act of 1991.



Water and Wetlands

H.R. 128 (Crapo, R/ID) to preserve the authority of the states over waters within their boundaries, to delegate the authority of the Congress to the states to regulate water.

H.R. 227 (McCollum, R/FL) directs the Secretary of the Army to conduct a study of mitigation banks.

H.R. 238 (Robert Menendez D/NJ) to amend the Oil Pollution Act of 1990 to make the act more effective in preventing oil pollution in the nation's waters through enhanced prevention of, and improved response

to, oil spills, and to ensure that citizens and communities injured by oil spills are promptly and fully compensated, and for other purposes.

H.R. 550 (Oberstar, D/MN), Non-Point Source Water Pollution Prevention Act of 1997 amends the Clean Water Act to establish requirements and provide assistance to prevent nonpoint sources of water pollution, and for other purposes.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the Food Security

Act of 1985 and the Clean Water Act to permit the unimpeded use of privately-owned crop range and pasture lands that have been used for the planting of crops or the grazing of corn in at least 5 of the preceding 10 years.

Wilderness.

H.R. 1567 (Hansen, R/UT) to provide for the designation of additional wilderness lands in the eastern U.S.

Sources: Land Letter, STATUS REPORT, Vol.16, No. 2,5,8,11,13, 17, and 20; and NOAA Legislative Informer, March 1997, Issue #22

River Crossings

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River Crossings

American Heritage SURVEY

Volume 6

September/October 1997

Number 5

Heritage Rivers Program Launched

President Clinton signed an executive order on 9/11 formally launching his *American Heritage Rivers Initiative*. Through this somewhat controversial initiative Clinton will seek to provide federal funds and spur local leadership in revitalizing 10 riverfront communities across the country. In a White House ceremony Clinton said, "Through this voluntary program ... we will lend our hand of assistance to community-led waterfront projects that protect natural resources, promote economic revitalization and preserve our cultural heritage".

"To calm fears that the program would infringe on property rights", Clinton adopted language from an executive order signed by President Reagan "that specifically protects property owners." Administration officials also said the program would need "no more than several thousand dollars" to print brochures and create a Web Site promoting it. Current federal employees would act as "navigators" to help localities in taking advantage of existing federal programs. White House Council on Environmental Quality Chair Katie McGinty said in defense of the initiative, "It is 100% voluntary. It is 100% driven by local concerns. It is 100% non-regulatory".

Rep. Helen Chenoweth (R/ID), who has offered legislation to block the

program, called Clinton's moves "illegal" because Congress has never authorized the program nor appropriated money for it. But the initiative was applauded by environmental groups, "many of whom have forgiven [Clinton's] failure as governor of AR to stop the poultry industry from polluting virtually every tributary of the White River". Rebecca Wodder, president of the group *American Rivers* said, "This program will transform river-restoration efforts throughout the country".

Communities will now have 90 days to apply for designation as "American Heritage" rivers. The "leading candidates," reports the *Washington Times*, are:

- Washington, D.C.'s Anacostia and Potomac rivers;
- MI's Detroit River;
- PA's Lehigh and Schuylkill rivers;
- VA's James River;
- IN's Maumee River;
- CO's South Platte River;
- CA's Los Angeles River;
- IL's Illinois and Chicago rivers;
- WY's Yellowstone River;
- MN, WI, IA, IL, and MO's Upper Mississippi River;
- CT, MA, NH and VT's Connecticut River;
- NC and TN's French Broad River;
- OR's Willamette River;
- NY's Hudson River; and
- WI's Fox River.

The designees are expected to be announced in January. Further in for-

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mation on the Initiative can be obtained from its Web Site: <http://www.epa.gov/rivers>.

Source: National Journal's GREEN-WIRE The Environmental News Daily, 9/12/97

Dam Removal - A Real Option for Fish Recovery

Future historians may trace the beginning of serious consideration of major hydroelectric dam removal to 4/25 and 7/28 of this year. Yes, removal of massive, megaton, multi-story dams — or, more accurately, breaching their walls or lowering their reservoirs and ending their ability to generate power — is being seriously considered now. Federal overseers, conservationists, local officials and others are desperate to restore fish stocks and, for the first time since the Depression-era wave of dam building began, are suggesting dam removal may be the solution.

The National Marine Fisheries Service (NMFS) on 4/25 listed coastal coho salmon populations in northern CA and southern OR as "threatened" under the 1973 Endangered Species Act (ESA). Pointing up how serious the problem is and how seriously it is taken, the move covers some 700 miles of coastline and extends up to 150 miles inland. Except for restrictions protecting Pacific Ocean whales and owl habitat throughout the Northwest, it affects an area larger than any other ESA-related ruling.

The Edwards Dam Precedent - Three months later the Federal Energy Regulatory Commission (FERC) for the first time began thinking about closing an operating dam for environmental reasons; specifically, the 160-year-old Edwards Dam in Augusta, ME, to benefit migratory fish in the Kennebec River. In their 7/28 final environmental impact statement (FEIS), FERC staff tersely state, "We recommend retirement of the Edwards Project and complete removal of the dam." FERC commissioners are expected to consider the FEIS over the next six months and are under further pressure from Gov. Angus King (I), the ME State Planning Office, ME Department of Marine Resources, U.S. Fish and Wildlife Service

(USFWS) and the NMFS to deny the relicensing request and order removal of the dam. The fact that such a final ruling could set a precedent for state, regional or national plans to preserve fish is not lost on anyone close to the issue.

While the FEIS delineates the proper fishway in case FERC in the end opts against dam removal, *Edwards Manufacturing* has said it would not spend more than \$2 million on such a system and presumably would abandon the dam if relicensing requires it. Ironically, fishway construction would return the Edwards Dam to its original state as the ME State Legislature realized very early the value of fish in the Kennebec River. It approved construction of the dam in 1837 on the condition a fishway was included, but the structure was immediately washed away and never rebuilt.

The Columbia River Basin - While the first operating dam removal appears possible, if not imminent, in the Northeast, nowhere is the idea more controversial than on the other side of the country, in the Columbia River Basin. Lawmakers, academics, conservationists, commercial interests, tribal leaders and others in ID, MT, OR and WA are talking seriously of scaling back the area's renowned hydroelectric dam system to help bring back rapidly disappearing salmon, to some the very symbol of the region.

Such a move is not subject to FERC regulation because the dams are federally operated by the U.S. Army Corps of Engineers (Corps) and their power is sold by the Bonneville Power Administration (BPA). Power generated from the Columbia River dams accounts for 40% of the hydropower in the U.S. and 75% of the electricity in the Northwest.

River Crossings

Published by

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

An estimated \$3 billion has already been spent over the last 15 years on innumerable efforts to save the fish. But those attempts — unmonitored and sometimes logic-defying, critics have said — have had just two things in common: they have tried to save fish without interrupting the Columbia's power generation, navigation, irrigation and other uses and they have failed. The BPA estimates that 7% of monthly residential bills, less for commercial users, goes to salmon-recovery programs. Federal and state taxes make up the rest of fish-related spending.

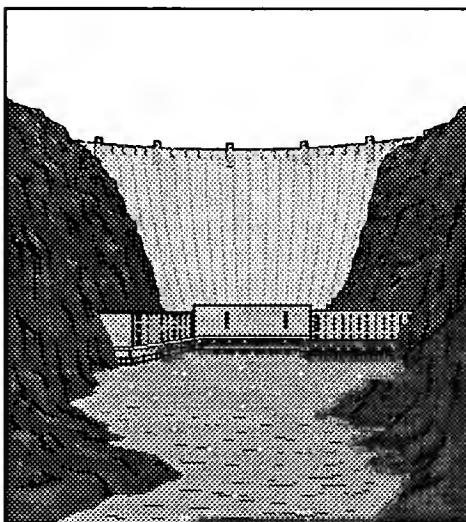
As perspective on the problem and the great shortfall in fixing it, BPA last year spent \$176 million and lost another \$102 million in "foregone revenue" by using water to help salmon swim past dams it otherwise would have used to produce and sell electricity. Total salmon recovery spending by all concerned agencies was \$438 million. By contrast, spending by all parties on all other endangered species in the U.S. reached just \$193 million in 1993, the most recent year for which such data is available.

Apart from BPA contracts, concerned agencies have financed the world's largest system of fish hatcheries — 92 in all, producing 166 million fish each year at a cost since 1981 of nearly \$700 million. However, these fish do not survive as well as wild ones, perhaps because they are not toughened by natural selection pressures, scientists surmise. Construction of fishways has soaked up another \$290 million but has not proven very effective.

BPA and the Corps have collaborated on an elaborate method of moving young fish beyond the dams and to the sea: Sucking as much as 90% of the young salmon from the river at the Lower Granite Dam, putting them on barges and floating them around the 8 dams that separate Lower Granite from

the Columbia estuary. While that has cost more than \$100 million so far, studies show the fish do not return to their spawning grounds much more than do fish left to use fishways and not enough to counter the plummeting fish stocks.

It is largely the failure of barging that has brought the region and all concerned parties to what many have been termed a "crossroads." While experts cannot explain with certainty why this has not worked — some say the most likely reason is that the fish do not learn what they would naturally by their surroundings and so



have problems finding their way back — most say that and other evidence indicates fish need as natural a river as possible to spawn and rebound from near-extinction.

These factors have led to two new proposals that would alter the Columbia Basin dam network:

- The first proposal is by the *Independent Scientific Group* which recommends restoring a 35-mile stretch of the Columbia River behind the John Day Dam to close to its natural state by dropping the reservoir some 40 ft. The newly shallow and braided river section would provide prime spawning grounds for Columbia River chinook salmon and serve as a resting place for Snake River fish on their migratory route, proponents and scientists say.

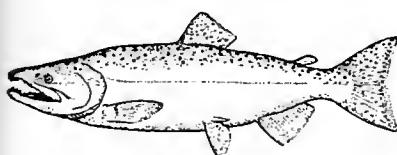
- The second proposal, put forth by a private consulting firm says that

breaching four Snake River dams — Ice Harbor, Lower Monumental, Little Goose and Lower Granite — would restore 140 miles of natural conditions in WA and offers the best hope of restoring ESA listed fish stocks there and in ID.

The direct and indirect costs of these proposals are enormous. The Corps estimates that construction costs of breaching the four Snake River dams would be in the neighborhood of \$530 million, which would be done by leaving the central, concrete parts intact and removing the earthen portions that join them to the river shores and canyon walls. That figure alone is some \$100 million more than all of 1996's combined salmon recovery efforts. Significant additional costs are sited by losses to irrigation, hydropower, and navigation.

Condit Dam, White Salmon River, WA - This river tumbles 45 miles from the glaciers of Mt. Adams to the Columbia River and teemed with steelhead, coho and chinook salmon until the dam was built in 1913. The *American Fisheries Society* reports that the fish are at a high risk of extinction and the spring chinook run has completely vanished. *PacifiCorp Electric*'s operating license to run the dam has expired and FERC says it must provide passage for fish to be granted renewal. *PacifiCorp* is challenging FERC's authority over any element of the dam and has said it may simply "walk away" from Condit rather than incur fish-related expenses. Numerous national, regional and local conservation and fishing groups have entered the relicensing process to support dam removal. *American Rivers* and others see *PacifiCorp*'s threat as a frightening harbinger: Deregulation of the electric industry and increased competition may make use of small hydropower dams uneconomical, even without fish protection. "As a result, the nation may face an epidemic of abandoned dams that have continuing adverse environmental impacts," says *American Rivers* in its 1997 report on river health.

Elwha and Glines Canyon Dams, Elwha River, WA - These dams have all but obliterated the river's salmon and steelhead populations, to which the *Elwha S'Klallam* tribe was guaranteed



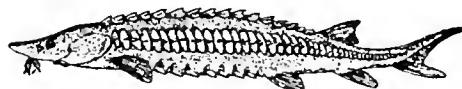
"chinook salmon"

access in an 1855 treaty. One of the dams is located in Olympic National Park and both affect the park, according to *American Rivers*. Tribal leaders and environmentalists urged removal of the dams when they came up for relicensing in the 1970s and the Interior Department, following a 1992 congressional mandate to study how the river and fisheries could best be restored, likewise recommended removal. Olympic National Park Superintendent David Morris recently said removing the dams would be the most effective of any Northwestern salmon-restoration effort and last year a panel of local citizens and businesses unanimously approved a plan to buy the dams and remove one immediately. The dams are owned by the *James River Corp.*, a timber company. Interior Secretary Bruce Babbitt said this summer that the dams' fate is in the hands of state officials and the congressional delegation. The appropriations subcommittee that funds Interior and that Sen. Slade Gorton (R/WA) chairs provided just \$3 million for the project for FY98. Gorton has said he fears breaching the Elwha River dam would set precedents encouraging removal of other Western dams.

Station 160, Genesee River, NY - Establishing the fish protection measures recommended by the NY Department of Environmental Conservation (NYDEC) would cost at least \$60,000 more than retiring the project altogether, according to *American Rivers*. Dam owner, *Rochester Gas & Electric Co.*, is currently negotiating with NYDEC, and action on a FERC draft environmental assessment is on hold pending outcome of the talks, the group says.

Baraboo River, WI - FERC claims jurisdiction over two small hydroelectric dams that produce marginal profits for their private owner. The relicensing process and its environmental mitigation requirements are almost certain to make the dams uneconomical, says *American Rivers*. The *Hydropower Reform Coalition* (HRC) is working with the owner, local officials and others on a river restoration plan that could include removal of these dams as well as a municipally owned one. Removal of all three — crowded in a five-mile area that slackens 60 mi. of Baraboo cur-

rent — would improve habitat for lake sturgeon and pre-historic paddlefish, *American Rivers* says.



"*Lake sturgeon*"

Menominee River, MI and WI - The *Wisconsin Electric Power Co.* recently agreed to remove three small dams — two in WI, the other in MI — as part of a broader settlement with HRC, state natural resource agencies and the USFWS that affects eight hydro projects in the upper Menominee River Basin. The "*Wilderness Shores Settlement Agreement*" marks the first time all major issues were resolved prior to the start of a FERC relicensing process, according to *American Rivers*.

According to the *International Rivers Network (IRN)* in a special issue of *World Rivers Review* (8/97), momentum around the world is building to remove more dams. They say a sign of progress in that area is the fact that the *American Society of Civil Engineers* has just published technical guidelines for dam removal - the first important sign that the dam-building industry is beginning to take this issue seriously.

More than 500 of the 50-year licenses given by FERC to private hydrodam operators in the U.S. are expiring by 2004. A coalition of river conservation groups have used this spate of expiring licenses to urge FERC to institute a comprehensive dam decommissioning policy. According to IRN, the Washington, DC-based HRC believes that new licenses should only be given on the condition that the owner pay into special decommissioning funds during the lifetime of their projects, just as nuclear power plant operators in the U.S. have to put money aside to pay their inevitable decommissioning costs.

However, since the engineering of dam removal is so young, exactly how to dismantle a very large dam, what to do with the sediment clogging the reservoir behind it, and how

much such an operation would cost are all largely unknowns. Removing a hydrodam could cost even more than building one, especially where reservoir sediments contain heavy metals and other toxic contaminants.

Safety is the most common reason for dam removals. Dams age at different rates and in different ways, depending on a variety of circumstances. Some dams may remain safe for a thousand years, while others may start to crack and leak after less than a decade. IRN says that around the world, some 5,000 large dam (defined by the industry as being at least 15 m. high) are now more than 50 years old, and the number and size of the dams reaching their half century is rapidly increasing. The average age of dams in the U.S. is now around 40 years.

Between 1977 and 1982 the Corps inspected 8,800 non-federal dams in the U.S., most of them privately-owned, which it classified as "high-hazard" - where a failure could cause significant loss of life. One-third of these dams were considered "unsafe," primarily because of inadequate spillway capacity. A 1994 survey showed at least 1,800 non-federal dams were still unsafe. The situation is similar for federal dams: in 1987 one-fifth of the U.S. Bureau of Reclamation's 275 dams were classified as unsafe, as were one-third of the 554 dams operated by the Corps themselves.

An *Ontario Hydro* study of data from several hundred North American dams shows that on average hydrodam operating costs rise dramatically after around 25-35 years of operation due to the increasing need for repairs. When the cost of maintaining an old dam exceeds the receipts from power sales, its owners must decide either to invest in rehabilitating the dam or, if the cost of repairs would be prohibitive, to disconnect the dam from the grid and cease producing power.

One of the largest dams to be removed in the U.S. to date is the 19-m. (62-foot) Grangeville Dam on ID's Clearwater River, which was dynamited in 1963 to restore salmon runs. A new report documenting hundreds of dam removals across the U.S. will be released this fall by *Friends of the*

Earth (FoE). The report contains a state-by-state listing of known dam removals, as well as detailed case studies of several completed removals. It also outlines pertinent issues which should be considered in a decision about whether to remove or retain a dam. The report provides policy makers and concerned citizens valuable information regarding past dam removals as they consider the future of dams in their own communities.

While safety and economics are the most often cited reasons for dam removal, the report documents several instances in which environmental restoration was a major factor. One example of a habitat restoration removal described in the report is that of ID's Lewiston Dam. The small blast that helped bring down the 45-foot-high hydroelectric dam in 1972 prompted ID Governor Cecil Andrus to comment, "for me, the [explosion] is a large one, for it symbolized ... that the main stem of the Clearwater River will always be free of dams." The dam removal improved the lot of migrating salmon and steelhead, and restored four miles of free-flowing river.

FoE's research found that dam removal has not been restricted to a particular type of dam, size of structure, or region of the country. Hydroelectric dams, municipal water supply dams, flood control dams, irrigation dams and mining dams have all been removed. While the majority of the historic removals have been smaller structures, dams over 75 ft. high have been taken out. The report found information on dam removals in every part of the U.S., from NM to WI to WA state. A free copy of the FoE report is available through their Northwest office at (206) 633-1661.

The HRC also has just released "*Relicensing Toolkit: Guidelines for Effective Participation in the FERC Relicensing Process*." Because FERC's relicensing procedures are complex, it can be difficult for parties less experienced with the process to participate effectively. The Coalition hopes that this "Tool Kit" will provide some assistance to groups and individuals as they seek to influence how a FERC dam will be operated. To get a copy of the Toolkit or for more information, con-

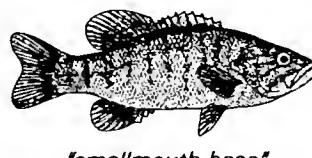
tact: Andrew Fahlund *Hydropower Reform Coalition* 1025 Vermont Ave., NW, Suite 720, Washington, DC 20005, (202) 547-6900, E-mail: hrc@igc.apc.org, Web Site: www.amrivers.org/hydro.html

There are more than 74,000 dams listed in the 1993-1994 National Inventory of dams, which includes all dams that are at least 25 ft. high or hold more than 50 acre-feet of water, and thousands of smaller dams on rivers and streams around the country. As the case studies in the FoE report demonstrate, dam removal is a well-established response for dealing with unsafe, unwanted, uneconomic or obsolete dams. The decision to remove a dam is not as "radical" an idea as some opponents might imply: dams have been removed countless times, for a wide variety of reasons, and under many different conditions.

In addition to projects up for FERC review, there are many small abandoned hydro dams across the Mississippi River Basin that merit serious consideration for removal. According to the MI Department of Natural Resources (MDNR), several abandoned small MI dams have been washed out during storms in recent years. "These failures," says the MDNR, "have caused extreme erosion, excessive sediment deposition and destruction of aquatic habitat accompanied by the loss of the fisheries." MI taxpayers, through the MDNR, have had to pay for removing several "retired" hydroelectric projects, while their former owners have suffered no financial liabilities.

In many cases these dams block access of the basin's fish to important spawning habitats. It is important to recognize that dams cannot and should not last forever. Dam removal is a necessary responsibility we have to our rivers and watersheds.

Sources: *Land Letter*, Vol. 16, No.23, 9/4/97, and Patrick McCully and Shawn Cantrell in *World Rivers Review*, Vol. 12, No. 4, 8/97



"smallmouth bass"

Flaming Gorge Dam Threatened

Several recent problems at the Flaming Gorge Dam on the Green River in UT have raised safety concerns for that 502 ft. dam. On 6/21, an emergency bypass tube at the dam sprung a leak in what the *Salt Lake Tribune* referred to as "the worst accident in the 35-year-old dam's history, and one of the worst in the annals of the *Colorado River Storage Project*." The leak flooded the power plant and automatically forced the dam to shut down, causing the water discharge to fall from 8,600 to 1,000 cfs. The change in flow killed fish and threatened the river's \$25 million fishing and recreation industry.

Bureau of Reclamation (BOR) investigators found a 3 ft. wide hole in the bypass tube and a 3 ft³. chunk of concrete missing near the base of the dam. BOR officials maintain that the dam was never in danger of failing. The dam was idle for ten days, costing the federal government an estimated \$870,000 in labor costs and lost power. The loss of one of two bypass tubes forced the release of water from the emergency spillway, further endangering downstream fish. The spillway takes water from the top of the reservoir, which is too warm for the tailwater trout to survive.

Consequently, the downstream fish endured a 20° fluctuation in water temperature within 3 hrs.. Earlier this year, the dam experienced three power outages within a week which stopped its turbines.

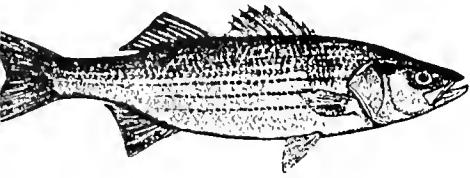
Source: Daniel Schact, *World Rivers Review New Briefs*, Vol. 12, No. 4, 8/97

Pumped Back Hydro Problems

Recent creel surveys at the Richard B. Russell (Thurmond) Lake in SC indicate a significant decline in the harvest of striped hybrid bass. This situation is setting the stage for a potential showdown between the state of SC and the U.S. Army Corps of Engineers (Corps) in the federal court system.

At the heart of the controversy are

four reversible turbines installed by the Corps for power generation at the Russell dam. During periods of low electrical demand, the Corps pulls water back into the impoundment with the new turbines, where the water is stored for later use



"striped bass"

From the onset, the SC Department of Natural Resources (SCDNR) has been an outspoken critic of the project, insisting that thousands of fish are literally shredded to pieces as they are carried through the turbines. State biologists insist that millions of fish have already been killed since the testing phase began several years ago.

"More information is needed to learn why the fish harvest was reduced. There may be other factors to consider, but the biggest change for 1996 was the operation of the four pump turbines," said SC biologist Tripp Boltin.

According to Boltin, creel surveys show a decline of 30%. Meanwhile, critics of the Corps project insist that a draft environmental impact study completed by the federal agency did not adequately address impacts of turbine operation on recreational fishing, fish entrainment, fish mortality, water quality, hydraulic conditions and the effectiveness of fish protection systems.

The state of SC, the *National Wildlife Federation* and its GA and SC affiliates sued the Corps once before to prevent potential fish kills. This suit occurred in 1988 before the four turbines were installed. The Corps began testing the turbines in 1992 under the guidance of a court-approved testing and monitoring plan. From that time until last year, the pump-back turbines were used infrequently.

The Corps was to release its final report in mid-June, at which time a 45-day comment period was to occur. If

the Corps decides to use the turbines on a regular basis, it will have to convince a federal judge that no environmental harm will occur to the lake's recreational fishery. SC officials believe that damage is already occurring.

Source: Craig Lamb, *B.A.S.S. Times*, 8/97

River Diverted to Preserve Coastal Wetlands

The Army Corps of Engineers recently began work on the largest freshwater diversion in LA, diverting 2% of the Mississippi River's flow to preserve 33,000 acres of sediment starved marsh in Barataria Bay.

The \$103 million project, which will ultimately aid nearly 800,000 acres of marsh and bays between St. Charles Parish and the Gulf of Mexico, was first authorized by Congress more than three decades ago. But, pipeline and oyster relocations led to delays, and resource managers were ultimately forced to move the project 25 mi. downriver.

Unlike the *Bonnet Carre Freshwater Diversion Project*, which has triggered protests from anglers and environmentalists, the Davis Pond Spillway has received support from natural resource advocates. Mississippi River water released through the Bonnet Carre diversion this year has been linked with algae blooms in Lake Pontchartrain (see next article).

"Not all diversions are created equal," said Mark Davis, Executive Director of the *Coalition to Restore Coastal Louisiana*. "In Pontchartrain, the impacts were not likely to be offset by the benefits. If the Barataria Bay models are correct, the benefits will be far greater and more effective than all of the other coastal projects put together."

The *Barataria Bay Diversion Project* includes an underwater channel, 535 ft. long by 85 ft. wide, which will draw river water through a control structure and into a series of 14 ft. by 14 ft. box culverts secured by iron gates to control the intake. From

there the water will course through a man made channel beneath two roads to a pump station and a 9,200-acre ponding area. Weirs will control the flow from the ponding area into surrounding wetlands on a path to Lake Cataouatche, the adjacent Lake Salvador and beyond.

Within a year, officials hope to see a jump in marsh grasses and floating vegetation that binds soil and provides nurseries for shrimp, crabs and some saltwater fish. The heaviest diversion periods probably will fall between January and May, imitating nature's springtime flooding.

Source: *Mississippi Monitor*, 8/97

Mississippi River Linked To Lake Pontchartrain Algae Bloom

The oxygen-robbing bloom of bluegreen algae and the declining fish catch predicted by conservationists when the Corps of Engineers (Corps) opened the *Bonnet Carre Spillway* have both materialized, officials with the *Lake Pontchartrain Basin Foundation* said. Fishing has been extremely bad since the opening of the spillway, and now a blue-green algal bloom has appeared, said the Foundation's Neil Armingeon.

In the past, blue-green algae has caused odors and fish kills in Lake Pontchartrain after large amounts of Mississippi River water got into the lake. No fish kills from the current algal bloom have been reported. But Foundation officials said the amount of algae is already fairly large, and they fear it will worsen, particularly if warm, relatively still weather continues. Algae blooms occur in warm, non-flowing water that contains high levels of nutrients. The blooms can take over the surface of a lake or pond under certain conditions.

"It's very visible along the north shore, and also showing up in the middle of the lake," Armingeon said. "We're afraid this is the beginning of a worse algal problem. But it's not surprising that when you pour millions of tons of nitrogen and phosphorus in a shallow estuary that you get algal blooms," he said, referring to the opening of the

spillway.

A number of conservationists, fishermen and environmental groups opposed the opening, saying it would hurt fishing and lead to algal blooms because of the high levels of fertilizers and other nutrients combined in Mississippi River water. Officials with the Corps maintain no evidence links the algal bloom to the spillway opening, and say many other sources put high levels of nutrients in the lake.

Bruce Baird, a Corps biologist, said high levels of nutrients are indeed showing up in the lake. But only some of that is the result of Mississippi River water, Baird said. Sewage from New Orleans and runoff into waterways that drain into the lake also add nutrients, he said.

The Corps opened the spillway in mid-March to relieve the pressure high water was putting on the Mississippi River levees that protect New Orleans. Opponents said the flooding danger wasn't big enough to justify opening the spillway and harming Lake Pontchartrain. A month later, after the danger of flooding passed and the lake's brackish water was mixed with fresh water from the river, the Corps closed the spillway.

Conservationists said previous openings of the spillway — and even heavy leakage through the spillway's planks during high water — have caused algal blooms.

Source: *Mississippi Monitor*, 8/97

Fish Killed by Toxic Ambush-Predator

The toxic ambush-predator dinoflagellate *Pfiesteria piscicida* has been implicated as a causative agent of major fish kills in several tributaries to the Chesapeake Bay. MD Natural Resources Secretary John Griffin estimated as many as 11,000 fish deaths, but fishers said up to 50,000 may have died. Dr. JoAnn Burkholder, a NC State University *Pfiesteria piscicida* expert, found the organism present in MD's Pocomoke River at toxic levels, and confirmed that the microbe contributed to the August fish deaths.

Similar fish kills occurred in MD's Kings Creek, a branch of the Manokin River, about 15 miles north of the site of the first fish kill; and in the Chicamacomico River. *Pfiesteria* has been blamed for killing more than a billion fish in NC in recent years and has also been found in FL waters.

A state-appointed panel of MD health experts said on 9/17 that people exposed to waters containing the toxic microbe *Pfiesteria piscicida* can develop chronic memory and learning problems "that increase with higher exposure." The team created by MD Gov. Parris Glendening (D) said humans can develop symptoms without coming into contact with fish kills. Still, study leader Glenn Morris said the research on 28 residents of MD's Eastern Shore indicated that people with little exposure to *Pfiesteria* infected water showed only mild symptoms. Doctors said there is no evidence to suggest people could become ill by eating seafood, but some MD grocers have refused to buy local seafood anyway because of customers' concerns.

The state-appointed team of physicians from Johns Hopkins University and the University of MD said the group of state environmental officials, fishers, crabbers and students examined on 9/12 showed difficulties with memory and learning. Study leader J. Glenn Morris said the symptoms were similar to those identified among 12 people who had been exposed to *Pfiesteria* in the Pocomoke River before and during an 8/8 fish kill. One Pocomoke River water-skier was treated for lesions and a form of encephalitis, a brain inflammation. Also, MD officials said three state workers were among the 14 people who became ill after coming in contact with the Pocomoke River during the August fish-kill. A doctor attending two of the employees said they suffered blisters and peeling skin on areas exposed to river water, as well as memory loss and respiratory problems.

The university researchers could not attribute the health problems to any other medical cause, and MD Health Secretary Martin Wasserman said there is a "likely link" between the

people's illnesses and *Pfiesteria*.

Many environmentalists and some scientists have said that nitrogen pollution from the region's poultry industry is a cause of the outbreaks. Following the fish kills, scientists investigated and found that chickens raised in the 430 m². Pocomoke watershed produce an amount of manure equal to the amount of sewage produced by a city of 1 million people. The manure is typically applied as fertilizer to farmland and eventually makes its way into the Pocomoke through runoff and leaching. State Delegate James Hubbard (D) has said he plans to sponsor a mandatory nutrient-management bill in the next legislative session to address the growing pollution concern. But other legislators warned that such a bill would face stiff opposition from the agriculture industry.

Meanwhile, fish with *Pfiesteria*-like lesions were also discovered VA's Rappahannock River, causing one scientist to "raise the possibility that the toxic microorganism has been attacking Chesapeake Bay fish for years." Eugene Burreson of the VA Institute of Marine Science could not determine whether *Pfiesteria* was to blame for the lesions, which appear on young menhaden in the river every fall. Burreson said such lesions have been detected since 1984 and that "there have never been any human health problems and no fish kills". Gregory Garman, environmental center director at VA Commonwealth University, said the discovery of *Pfiesteria* in the Rappahannock would challenge the theory that nutrient pollution is to blame for the outbreaks, because the river is one of VA's cleanest.

MD and DE officials said they suspect that *Pfiesteria* may have caused fish kills on the East Coast as far back as 1982." Research published in 1987 by the National Oceanic and Atmospheric Administration details the discovery of fish with lesions in 30 eastern waterways, but scientists at the time attributed the lesions to a fungal infection. Sergio Huerta of the DE Dept. of Natural Resources and Environmental Control said a major fish kill in 1987 in the Indian River south of Rehobeth, DE, appears to have been caused by *Pfiesteria*.

Although scientists have not proven the theory that waste runoff has caused the problem, MD officials say there is enough evidence of a link to step up the state's overhaul of 64 wastewater treatment plants to reduce the amount of nitrogen and phosphorus that enter the bay. Regulators including EPA regional administrator W. Michael McCabe have suggested the *Pfiesteria* outbreaks may also lead to stricter agricultural pollution rules, including tougher permit requirements. Meanwhile, a Hampstead, MD, mechanical engineer has developed a furnace that uses chicken manure to heat poultry houses. Steve Vayda's research has attracted funding from the MD Dept. of Business and Economic Development and the U.S. Agriculture and Energy departments; some officials say the innovation might help reduce manure runoff.

The *Pfiesteria* problem was significant enough to attract the attention of the White House, and officials assembled a meeting of federal experts on 9/11 to discuss the threats posed by the organism. "In all, five governors, several cabinet secretaries and President Clinton focused part of their day on *Pfiesteria*. Spurred by the concerns of MD Gov. Parris Glendening (D), the Clinton administration guaranteed to provide "as much help as possible."

Speaking at a news conference, Glendening said he had spoken to the President and to VP Gore about the issue, and he predicted that tighter limits on farm runoff would be required to fight the toxic microbe. The governor "stopped just short of saying he expected legislation to impose mandatory controls" on poultry farms in bay watersheds. "But he made it clear that he thinks the current voluntary system is not working." Glendening also formed a blue-ribbon panel comprised of farmers, scientists, environmentalists and lawmakers who will study the problem and propose solutions by 11/1.

In Richmond, VA Gov. George Allen (R) said he would form a similar committee. Glendening said MD would immediately allocate \$2 million to farmers to help them plant "cover crops" this winter to stem nitrogen runoff. On 9/11, the U.S. House voted to spend

\$7 million to research *Pfiesteria*'s effect on human health in the Mid-Atlantic states. VA Gov. George Allen (R) on 9/23 announced a \$2.3 million plan to research the microbe and increase monitoring efforts. He also said he would establish an expert medical panel similar to MD's.

Regarding the organism itself, Dr. Burkholder and her colleagues describe *Pfiesteria* biology in the abstract of a recent paper as follows:

"...*P. piscicida* is stimulated by fresh fish secreta, and it was lethal to all 19 species of native and exotic finfish and shellfish bioassayed in culture; thus far in field and aquaculture kills linked to the dinoflagellate, 13 additional fish species have been affected. Field data in combination with confirming laboratory bioassays documented toxicity at temperatures ranging from 12° C to 33° C, with most outbreaks occurring at 26° C or higher. *P. piscicida* also exhibits wide salinity tolerance; it was lethal to fish from 0 to 35 ppt in calcareous waters, with an optimum salinity for growth and toxic activity at 15 ppt. It was toxic to fish day or night (greater than or equal to 250 toxic zoospores ml⁻¹) without an apparent light optimum, in experimental laboratory conditions ranging from 0.2 uEin m⁻² s⁻¹ (darkness for all but 30 to 60 s at 20 uEin m⁻² s⁻¹ per 24 h period) to 200 uEin m⁻² s⁻¹ (12:12 h light:dark cycle). Moreover, field fish kills have occurred in darkness and at light intensities up to 2400 uEin m⁻² s⁻¹. Through direct microscope counts of water samples, confirmed identifications with scanning electron microscopy, and confirmed toxic activity in bioassays, *P. piscicida* was implicated as the causative agent of 52 +/- 7% of the major fish kills (affecting 10³ to 10⁹ fish from May 1991 to November 1993) on an annual basis in North Carolina estuaries and coastal waters. Since their discovery in natural habitat during 1991, *Pfiesteria*-like species also have been tracked to eutrophic sudden-death fish kill sites in estuaries, coastal waters, and aquaculture facilities from the mid-Atlantic through the Gulf Coast. Toxic ambush-predator dinoflagellates likely are widespread in warm temperate/subtropical regions, acting as

significant but often undetected sources of fish mortality and disease."

Sources: National Journal's GREENWIRE The Environmental News Daily, 8/8, 8/15, 9/2, 9/8, 9/11, 9/12, 9/15, 9/16, 9/17, 9/18, and 9/24/97 and Burkholder, J.M.; H. B. Glasgow Jr, and C. W. Hobbs. 1995. Fish kills linked to a toxic ambush-predator dinoflagellate: distribution and environmental conditions. *Marine Ecology Progress Series*, Vol. 124: 43-61.

Hog Waste Update

Murphy Family Farms, Smithfield Foods, Carroll's Foods and Prestage Farms are building the nation's largest hog operation in southwestern UT. The *Circle Four Farms* will be "so large that it dwarfs the industrial-style" hog farms in NC that have come under fire recently after a series of waste spills. By the year 2000, the UT operation is expected to annually produce up to 2.5 million hogs. The *Circle Four* partners say their farm's remote location near Milford, UT, will limit waste-spill and runoff risks. And they have "agreed to the kind of land-use regulations vigorously opposed" by NC hog farmers, such as siting buildings more than three miles from any home. But some residents "complain that the *Circle Four* partners have talked and bought their way into UT politics".

The *Farmers for Fairness* lobby group based in NC has begun airing radio and TV advertisements attempting to derail legislation that would put a two-year moratorium on new hog farms in that state. The ads "imply" that municipalities, not pork producers, are to blame for diminished water quality in eastern NC. The state's pork producers blame city sewage plants for pollution in NC's rivers, and are urging local officials to force all polluters to "pay for every pound of algae-spurring, fish-choking nitrogen" they dump into a river. The *Farmers for Fairness* are also objecting to a proposed \$1 billion bond issue that would finance wastewater treatment plant upgrades. The group "wants to move the debate away from improving sewage plants that sometimes pollute to punishing everyone" involved.

Don Reuter of the NC Dept. of Environment, Health and Natural Resources said that farmers and sewage plants are required to report all sewage spills, but that hog farms do not face the same extensive monitoring as treatment plants. "Citing a pattern of pollution violations," state water regulators are investigating the environmental compliance record of the world's largest hog slaughterhouse in Bladen County, NC. The *Carolina Food Processor* pork plant, owned and operated by VA-based *Smithfield Foods*, has been cited for violations 20 times and fined \$32,000 for "dozens of other" pollution infractions since 1993, according to the state Division of Water Quality (DWQ). Most of the violations involved high levels of pollutants in the 3 million gallons of waste the plant releases into the Cape Fear River each day. Ernie Seneca of the DWQ said the agency would examine all of the company's environmental records, including those related to a VA case which recently resulted in a \$12.6 million fine for polluting the Pagan River.

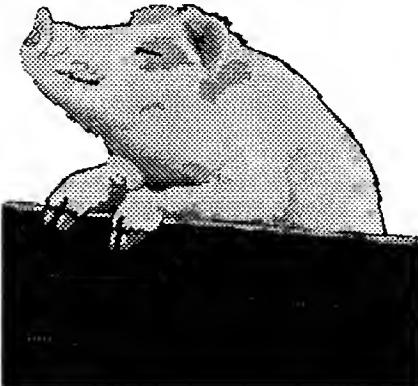
In VA several hundred opponents of hog farms planned for central and southern VA packed a hearing held by a state legislative committee studying the expansion of the hog industry. Joseph Maroon of the *Chesapeake Bay Foundation* urged the lawmakers to impose a two-year moratorium on new farms similar to the one adopted by NC Gov. Jim Hunt on 8/27.

In PA state Senate Majority Leader Robert Jubelirer (R) is proposing a new agency to draft guidelines for that state's expanding hog industry. Many rural residents say the industry lacks oversight. Regulations aimed at controlling agricultural runoff into PA waterways takes effect on 10/1. The Nutrient Management Act will require owners of large-scale dairy, chicken and hog farms to design and implement plans to control waste runoff.

"Providing what could be a powerful tool for local officials" in KY, that state's attorney general's office on 8/21 said counties have the power to regulate large hog farms. KY Assistant Attorney General Ross Carter's opinion, which is not legally binding, "comes amid growing controversy over

two large hog farms planned in western KY that together would produce about 600,000 pigs per year." That state's pork industry had argued that KY's right-to-farm laws kept counties from regulating "normal and accepted" agricultural operations as a nuisance. But Carter said that the laws were meant to protect family farms and that modern corporate hog farms "are less a farm than a manufacturing facility." Critics of the farms have said that state regulations don't address potential pollution and stench from hog waste. Gov. Paul Patton (D) recently ordered the state to develop emergency hog-waste regulations and has told the state to stop issuing permits for hog-waste systems. "Simmering emotions" over the issue "may have contributed" to the shooting of a hog-farm opponent at a proposed facility in Hickman County, KY, earlier this summer.

OH state Sen. Dick Schafrath (R) has proposed a joint legislative commission to study the effects of



high-density livestock farms on that state's environment and economy. But state Sen. Karen Gillmor (R) said the industry has been studied enough and lawmakers shouldn't "wait another two or three years" to act. She plans to introduce a measure that would put "tougher" restrictions on large-scale farms, which are currently exempt from many environmental laws.

In MO the attorney general has launched an investigation into the waste-discharge practices of Kansas City-based *Premium Standard Farms*, the nation's third largest pork producer. The state Dept. of Natural Resources has alleged that *Premium*

Standard has discharged wastes without a permit, operated unapproved waste-collection systems and over-applied waste as fertilizer on farm land. *Premium Standard* officials acknowledge "only one recent spill" in northern MO in June. The firm also faces a federal lawsuit filed in July by the *Citizens Legal Environmental Action Network*, alleging even more violations

Seward County, KS, on 9/16 became the 18th county in Kansas to oppose new corporate hog operations. Residents voted two to one to block a proposed farm that would house 400,000 hogs, and Seward County commissioners said they will honor the referendum in their decision on whether to allow Shawnee Mission, KS-based *Seaboard Farms* to build. Jim Shantz of NC-based *Murphy Family Farms*, the U.S.'s largest pork producer, said the Seward County decision would not have long-term effects on the industry. Shantz said, "There are other communities where corporate farming is being welcomed." But Nancy Thompson of the Walthill, NE-based *Center for Rural Affairs* said the Seward County vote, like similar ones in NE, KY and the other KS counties, "reflected a widely held sentiment."

In OK water-quality issues related to large hog farms are some the most important facing the administration of Gov. Frank Keating (R), according spokesperson Brian Griffin. The governor's Animal Waste and Water Quality Protection Task Force must propose legislation or regulations addressing corporate farms by 12/ 1.

In NE Attorney General Don Stenberg on 8/27 ruled that state lawmakers may impose a moratorium on the construction of large hog farms in order to protect the environment and public health. State Sen. Cap Dierks, who requested the nonbinding opinion, said that he may propose a moratorium that would give county officials time to implement restrictions on hog farms.

In a poll taken in IA, a majority of those questioned say that state law should not encourage formation of huge hog operations. When asked if IA laws should encourage or discourage large hog operations, 59% said

these farms should be discouraged, 32% were in favor of the big operations, while 9% were not sure. While 59% said the law should discourage big hog farms, an even larger majority said the law should be tough when it comes to controlling agriculture pollution. Sixty-eight percent said farming practices that cause pollution and odor problems need to be severely restricted, even if that has a negative impact on farmers. The poll also found that a majority of Iowans believe that small family farms are efficient and competitive. Sixty percent said small farms are efficient enough to compete with big ones, while 17% disagreed.

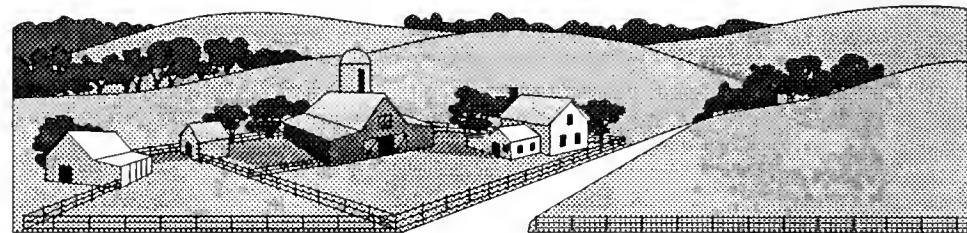
Fish kills have cropped up all over the Mississippi River Basin this year related to spills of hog wastes from intensive livestock production facilities. Concentrations of animals in confinement operations such as these, and the intensive use of their wastes to fertilize farm crops in localized areas can lead to outbreaks of disease and pest organisms. The outbreak of the toxic ambush-predator, *Pfiesteria piscicida*, in the tributaries to the Chesapeake Bay (see previous article) may just be a harbinger of things to come for other rivers across the country unless adequate measures are taken to regulate these activities. We didn't have these problems when the land was less populated, and agricultural activities were spread out across the country-side in the form of family farms.

Sources: National Journal's GREEN-WIRE *The Environmental News Daily*, 8/6, 8/20, 8/26, 9/3 9/16 and 9/22/97; and Mississippi Monitor, 8/97

Livestock Feeding, Corn Prices, & Navigation

The impact of intensive livestock feeding operations is beginning to be reflected in corn prices across the state of IA. This in turn, could soon be reflected on demand for use of the state's rivers for export of grains to foreign markets.

This discussion surfaced in a *Des Moines Register* article last spring, but more recently, became the subject of a "pointed" discussion between a Missis-



sippi River floodplain farmer and an inland farmer at a late August meeting held in Davenport, IA to discuss Mississippi River environmental and navigation issues. The inland farmer argued against expansion of the Upper Mississippi River navigation system, saying that the trend is toward production of grain for secondary markets (i.e. ethanol and livestock) and away from export, which in turn, will lead to a decline in demand for expanding the navigation system.

The *Des Moines Register* article reported that according to a trio of IA State University (ISU) economists, the prices of corn in various localities across the state demonstrate the impact of livestock feeding operations — mostly large-scale pork and poultry facilities — on crop prices. The economists say that increased demand for corn by livestock operations promises to change IA's traditional corn pricing patterns.

In the past, local corn prices have been determined by distance from the Mississippi River. "In general, grain producers in regions farthest from export ports will receive the lowest grain prices," wrote ISU economists Dermot Hayes, Daniel Otto and John Lawrence in a report called "*Pork Production in Iowa: An Industry at a Crossroads*." Because of their relative distance from export ports, landlocked IA corn producers receive some of the lowest corn prices in the world, the economists said. And because of the cost of transporting corn from inland IA to the Mississippi River, corn prices in north-central IA tend to be lower than corn prices in southeast IA, which is nearer the river market.

The economists said that largescale hog and poultry operations estab-

lished in the past four years have the potential to soak up all the corn produced in the county where a production facility is located, thus driving up the local price and altering the state's traditional marketing patterns. As local demand for corn increases because of livestock feeding, there will be less incentive to ship corn to export markets via the river. In fact, if livestock feeding expands so much that localities become corn-deficit areas, corn might start to move from the river west, counter to the current pattern, the economists said.

Such changes in regional economic patterns and movement of grain away from the river could have a major effect on the demand to expanding navigation capacity on the Mississippi River, and could be good news for the River's ecosystem.

Source: By line article by Jerry Perkins, Farm Editor, *Des Moines Register*, 3/24/97

Flood Control/Navigation Plan Draws Fire From Farmers, River Users

A coalition of levee districts, navigation boosters and other economic interests have proposed a comprehensive plan for the Upper Mississippi River which would expand some levees and deepen the river's navigation channel. But the proposal faces as much opposition from floodplain farmers as from advocates for reclamation and river wildlife.

The *Upper Mississippi, Illinois and Missouri Rivers Association* (UMIAMRA), formerly the *Upper Mississippi Flood Control Association*, commissioned a study by *Deft Hydraulics*, a Dutch water resources firm best

known for recommending 1,250-year levees along portions of the Rhine River in the Netherlands. Although the Association's members initially supported the study, some supporters of the organization, which includes 120 levee and drainage districts now oppose *Delft*'s recommendations.

The *Delft Report* makes the following statements:

- The Corps of Engineers could be far more effective if the agency were to have a "mandate" to fully control publicly owned floodplain land and all levees (public and private), and to strive for balanced use of the river for all users and functions, now and in the future.
- The resources of the river and floodplains could be used more intensively, without compromising sustainability, providing that planning of the use of resources is carried out properly. The government should initiate such planning. The planning process would be steered away from one marked by confrontation of interests to one in which stakeholders "actively participate with an attitude of willingness to reach compromises."
- The nation's interest in the economic development of the Upper Mississippi, Illinois and Missouri River Basin seems poorly reflected in the restricted way future benefits are calculated by the Corps. The present estimation of future benefits under values economic development and environmental protection. A balanced River Basin Development Plan for the Upper Mississippi, Illinois and Missouri River Basin, drafted interactively with participation from all parties concerned, will improve the understanding of the complete, interrelationships between environmental protection, resource use, and river and floodplain development.
- The interests of the farmers on the bottomlands should be properly taken into account in river management, in particular, flood management, river navigation, and seepage and drainage issues. Damages incurred by farmers due to river and flood management operations need to be compensated, and farmers who move buildings out of the floodplain and allow their land to

be flooded should be compensated, both for lost revenues from crops and for some of the benefits to society of not having to build more costly flood protection.

- Given cost considerations, increased flood safety will, for the near future primarily rely on improving the levee system and not on reducing flood stages by other means. One option might be to raise rural levees upstream of large urban and industrial areas to 500 year levels. During extreme floods, rural areas could be inundated deliberately to bring down the peak flood stage at urban areas.
- The government should invest to allow river navigation to expand. With a limited amount of annual dredging, the depth of the navigation channel can be increased to more



than 9 ft. depth. Studies should be conducted for 10, 11, and 12 -foot channels. To allow 12-foot navigation, the locks do not need adjustments. The existing lock system along the Mississippi and Illinois rivers is currently near capacity.

- The Upper Mississippi, Illinois and Missouri rivers, although undoubtedly impoverished compared to the "natural state," still exhibit river corridors of outstanding natural beauty and ecological importance. Nature restoration should concentrate on the rehabilitation of the river processes, rather than the creation of habitats for specific species. If wetlands are well distributed along the river ("a string of pearls"), the river ecosystem itself will develop the cover types and species populations belonging to the

system.

***Two Rivers Levee and Drainage Association*,** a newly formed consolidation of 50,000 acres of farm land located just north of Burlington, IA, has opted to withhold their support of the *Delft Report* because of the report's proposal to deliberately inundate some areas of the floodplain in favor of higher levees and increased protection in urban areas. The report places a special emphasis on the St. Louis area, where the *Delft* team has proposed raising levees to 500-year levels.

Richard Siegle lives and farms the bottomlands near Oakville, IA and was an avid supporter of the comprehensive plan last fall. He toured much of the Upper Mississippi, along with UMIMRA's then-Chairman John Robb of rural Gladstone, IL and *Delft* Water Resources Engineer Jost Dijkman of the Netherlands, holding town meetings and soliciting funds in support of the developing concept

But now Siegle, who is also chairman of the *Louisa-Des Moines County Drainage District No. 4*, feels irate and disillusioned. "Their recommendation was to put in a gate above Burlington. If the water got too high and Burlington might flood, they would open that gate and let the floodwaters come in here. How can you have members paying dues and expect them to support this," he said recently during a telephone interview. Later he commented, "And another thing, the banking associations won't loan money to landowners if they know the land might be flooded."

Siegle's sentiments are shared with other landowners and members of the *Two Rivers Levee and Drainage Association*. Their land, which is currently protected by a levee and regularly pumped and drained of any excess water, was able to withstand the flood of 1993.

"Ours was one of the few levees that didn't break in '93," says *Two Rivers* Administrator Vicki Stoller. "And there are homes behind that levee." There are parts of the *Delft Report* UMIMRA's membership is willing to support, such as expanding levees and increased dredging of sand from the river's navigation channel. *Two Rivers*

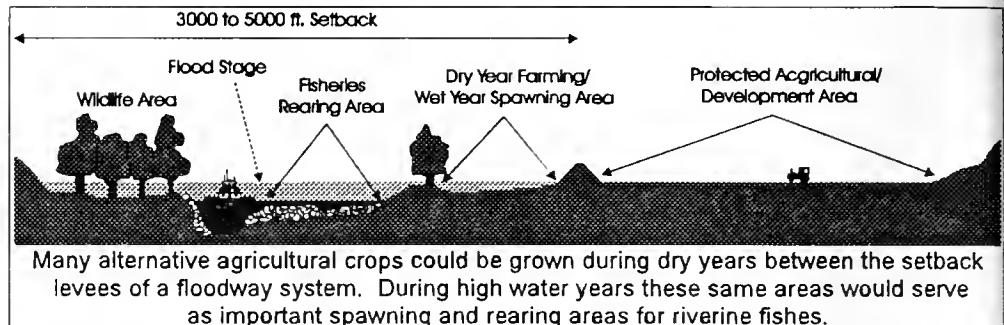
would like to see the dredged sediment used to strengthen and fortify their levees. "We feel it would be just as economical in the long run if the Corps would do that instead of using the sand to build another island, or take it down river and drop it in a hole," Stoller says

UMIMRA's plan, based on the *Delft Report*, is now spearheaded by newly elected President Dave McMurray in Hancock County, IL, a fertile strip of river towns and agricultural lands located across from *Two Rivers'* levee and drainage districts. Weakened levees broke and the area received substantial flood damage in the spring of 1993. McMurray hopes that "in this next round of budgeting ... next year ... a Congressional review of the *Delft* plan can be put in place."

But that plan is facing competition. Currently, the Corps spends \$130 million annually to maintain the river's navigation channel and is conducting a \$45 million study on the feasibility of lengthening locks from 600 ft. to 1200 ft. The *Delft Report* proposes lengthening the locks and widening the channel to limit delays, increase commercial and recreational navigation, and allow two-way barge traffic. Ultimately, the lock expansions could cost more than \$1 billion, according to the Corps.

Conservation groups are concerned that expanding navigation and flood control will reduce the river's value for recreation and tourism. "It is ludicrous to think about expanding the navigation system to benefit a few at the expense of a \$1.2 billion recreation industry," said Suzi Wilkins, Executive Director of the *Mississippi River Basin Alliance*, referring to plans such as those suggested in the *Delft Report*. "If the system crashes and we lose natural resources, we lose the economic benefit derived from it."

Environmentalists aren't the only ones concerned with the effects of implementing this plan. Jack Voelker and Randy Winegard were quick to give UMIMRA's lofty ideals a thumbs down while preparing for a pleasure boat cruise upriver. The two Burlington businessmen both agreed that, economically, the plan wasn't practical. "They phrase everything as economic



development, but think of what that will cost," says Voelker. A retired-yet very vocal-river authority, Jack gave a series of lectures on river issues after the '93 flood and has attended some of UMIMRA's meetings. He also owned and operated a chartered river boat business for a number of years.

"We're just going to have to get everybody together, explain what's happening, and give some of the land back to the river," he explains. Citing the building of levees as a major contributor to intense flooding problems, Winegard adds, "I don't think we should be building the levees any higher. I think we'll just create more flooding and bigger floods."

Source: Carolyn Noon, *Mississippi Monitor*, 8/97

Floodplain Farming Survey/Options

In August, the *Minnesota River Basin Joint Powers Board* surveyed floodplain landowners in the Minnesota River floodplain to help identify profitable land uses that meet both economic and conservation needs. In particular, information was requested on interest in crops that tolerate flooding, but also resist erosion and increase wildlife habitat. More than 250 landowners replied to the survey and more than 150 attended workshops in Granite Falls, New Ulm and Le Sueur.

Workshop participants expressed an interest in renewable energy crops, tree production, grasses like reed canary grass, and hunting leases. In the next 18 months, plans are being made to work with floodplain experts

like *American Rivers* to analyze and demonstrate floodplain land uses to measure their economic potential and conservation benefits. Todd Lein, a floodplain farmer from Northfield, has been contracted by *American Rivers* to demonstrate many of the flood tolerant uses of the floodplain about which interest was greatest. Results of the survey follow:

- Percentage of landowners wanting information about various floodplain uses (respondents could pick two):

Renewable energy crops	29%
Timber and pulpwood	25%
Hunting leases	22%
Hay and forage	16%
Grazing	14%
Fruit and nut trees	10%
Alfalfa	9%
Rice	3%

- Obstacles to adopting alternative floodplain land uses*:

Equipment costs	37%
No market	37%
No experience	29%
Getting loans	23%
Climate	19%
Tradition	19%
Soils	14%
Peer pressure	13%
Transportation costs	12%

* Percent rating each as a tough obstacle.

- Percentage saying these things would encourage them to grow alternative floodplain crops (respondents could pick three):

Tax credits	40%
Long-term contract with crop end users	40%
Assurance that alternative crops will improve the Minnesota River	40%
Income support payments	37%

Knowledge provided by other experienced landowners	20%
More information from local extension services	13%
Flexible easements	13%
Participation in a cooperative buying arrangement	10%

● Percentage of floodplain landowners who have grown alternative crops in the past*:

Alfalfa	25%
Wheat	23%
Oats	19%
Small Grains	5%
Hay	4%
Sunflowers	4%
Edible beans	3%
Sorghum	3%
Grasses	2%
Flax	2%
Rye	2%

* 53 % of floodplain landowners said they had grown crops other than corn, soybeans or sugar beets in the floodplain.

● Top reasons to try alternative floodplain land uses (respondents could pick three):

Restore the river's natural filtration system	59%
Reduce crop losses associated with flooding	50%
Restore habitat for river wildlife	40%
Improve quality of drinking water	38%
Increase income potential	37%
Absorb excess phosphorous and nitrogen found in fertilizer	24%

● Threats to the Minnesota River*:

Bank erosion	33%
Loss of wetlands	28%
Inadequate sewage treatment	25%
Manure lagoon failures	25%
Runoff from farms	24%
Pollution from factories	22%
Erosion from farms	18%
Animal waste management	17%
Faulty septic tanks	14%
Suburban development	12%

* Percentage rating each as extremely serious

● Best solutions for cleaning up the Minnesota River (respondents could pick three):

Improved tillage and land

use practices	49%
Wetlands restoration	42%
Regulate polluting industries	36%
Bank stabilization	35%
Better livestock waste management	25%
Sewage treatment plants	23%
Land acquisition	13%
Alternative crops	13%
Replace aging septic tanks	11%
Zoning controls	8%

Contact: Melissa Gerr, *Minnesota River Basin Joint Powers Board*, 2610 Freemont Avenue S, Minneapolis, MN 55408

Hypoxia Study

An oxygen-depleted (hypoxia) "dead zone" in the Gulf of Mexico thought to be caused largely by fertilizer use in the Mississippi River watershed has spread across nearly 7,000 m² each summer since 1993. The oxygen-poor conditions arise from the growth and decay of too much algae, caused in turn by nitrogen in agricultural runoff, sewage discharges and air pollution throughout the central U.S. The river basin drains 65% of the nation's harvested cropland, and nearly half of the 11 million tons of nitrogen fertilizer used in the U.S. each year is applied in the region.

Concern about the dead zone's impact was led the *Earthjustice Legal Defense Fund* to warn the USEPA in 1/95 that runoff into the Mississippi River was violating state and federal water pollution standards. "Out of this came official EPA acknowledgment" of the dead zone's seriousness and a commitment to stem its spread, according to *Earthjustice's* Nathalie Walker. The agency now is establishing a 26-state task force to address the situation. The "ambitious" 18-month project involving independent scientists and officials from the federal government and 26 states in the Mississippi River Basin will try to determine what can be done to stop the problem.

Scientists agree that the dead zone is caused by increasing pollution flushed into the gulf from the Mississippi River Basin. Six teams of experts will meet to "resolve scientific questions

and develop options" for slowing the flow of pollutants into the Gulf, according to Dan Scavia of the National Oceanic and Atmospheric Admin. But "solutions may not come easily." More than 40% of the continental U.S. is drained by the Mississippi and the "bulk" of the river's nitrogen nutrients come from farm runoff. The "most likely" plans to limit pollutants could include "unpopular" controls on agriculture, such as buffer zones along rivers and streams.

Donald Boesch, director of MD's three major Chesapeake Bay laboratories, said that at a *Midwestern Farm Bureau* conference earlier this month, farmers "sometimes got pretty hostile" in discussing the problem, but "many were genuinely trying to understand [it]."

Source: National Journal's *GREEN-WIRE The Environmental News Daily*, 7/30 and 8/25/97

Designing Riparian Buffers for Agricultural Lands

According to experts at a recent *"Farming the Floodplain"* conference, sponsored by *The Wetlands Initiative* in Moline, IL there are virtually "unlimited funds" available under the current farm bill to develop riparian buffers for the nation's streams and rivers. For more information on this program readers are encouraged to contact their local National Resource Conservation Service (NRCS) office.

One of the handouts provided at the *"Farming the Floodplain"* conference detailed how to design such a buffer for agricultural lands. That handout is summarized below:

There are four basic steps in designing a successful riparian buffer They include:

- Determining what benefits are needed;
- Identifying the best types of vegetation to provide the needed benefits;
- Determining the minimum acceptable buffer width; and
- Developing an installation and maintenance plan.

Riparian buffers can:

- reduce unacceptable bank erosion;

- reduce erosion from cultivated crops, livestock enclosures, or grazing along a waterway;
- reduce algae blooms or excessively turbid water;
- increase the amount of shade and larger debris for fish habitat;
- enhance wildlife habitat;
- enhance the diversity of vegetation and landscape beauty;
- etc.

The three basic types of vegetation including grasses, forbes, shrubs, and trees each provide certain benefits. Grasses are best at filtering sediments, nutrients, pesticides, and microbes; while providing for range, pasture, and prairie wildlife. Shrubs are excellent at stabilizing stream banks, while providing for aquatic and riparian habitats, enhancing visual diversity, and providing for flood protection. Trees provide excellent bank stabilization; while filtering both soluble and sediment bound nutrients, pesticides, and microbes; providing for forest wildlife, economic products, visual diversity, and flood protection.

The minimum acceptable buffer width is the one that provides acceptable levels of all of the landowner's needed benefits at an acceptable cost. Minimum acceptable width is determined by the specific benefit that requires the greatest width. For most benefits, research information is limited, but best estimates are as follows:

- bank protection - at least 20 ft.
- sediment runoff - at least 25 ft.
- aquatic habitat - 35-50 ft.
- wildlife habitat - 45-60 ft.
- nutrient runoff - 50-95 ft.

As noted below, required widths may vary a great deal depending on site conditions, vegetation type, and landowner objectives:

- **Stabilizing eroding banks** - On smaller streams and lakes, good erosion control may require only the width of the bank to be covered with shrubs and trees. Extending buffer vegetation beyond the bank is necessary where more active bank erosion is occurring. Severe bank erosion on larger streams will require special engineering practices to stabilize and protect the bank.

- **Filtering sediment and sediment attached contaminants from agricultural runoff** - For slopes less than 15%, most sediment settling occurs within a 25 to 30 ft. wide buffer of grass. Greater width may be required for shrub and tree vegetation, on steeper slopes, or where sediment loads are particularly high.

- **Filtering soluble nutrients and pesticides from agricultural runoff** - Widths up to 100 ft. or more may be necessary on steeper slopes and less-permeable soils to obtain sufficient capacity for infiltration of runoff, and vegetation and microbial uptake of nutrients and pesticides. Dilution of contaminant-rich runoff by rain falling on the buffer is directly related to buffer width.

- **Providing shade, shelter, and food for aquatic organisms** - Warm water fisheries may require only very narrow buffers, except where shade and temperature control is needed to discourage algae blooms. Width up to 100 ft. in trees may be needed for adequate shade and water temperature control for cold water fisheries in warmer climates.

- **Providing wildlife habitat** - Width required is highly dependent upon desired species. For example, NE NRCS standards call for a minimum of

45 ft. of grass to promote upland game birds. Generally, larger animals have greater minimum width requirements, particularly interior forest species. Narrower width may be acceptable where a travel corridor is desired for connecting larger areas of habitat.

- **Producing Economic products** - Minimum width requirement is highly dependent upon the desired crop and its management. Tax incentives and cost-share program requirements must also be considered in determining buffer width from an economic standpoint.

- **Visually diversifying a cropland landscape** - Width required to obtain acceptable visual diversity depends entirely on the landowner's opinion.

- **Protecting cropland from flood damage** - Smaller streams may require only a narrow width of trees or shrubs to adequately protect cropland from flood damage. A larger stream or river may require a buffer that covers a substantial portion of its floodplain.

Installation:

- Local knowledge should be used to select the best plant species for each situation.
- Easily obtainable species yielding quick establishment and good growth on the site should be emphasized.
- Width may be varied to straighten tillage boundaries along meandering streams.
- Existing perennial vegetation should be incorporated into the buffer design, if possible, since some benefits, such as shade and bank stabilization from trees, are maximized only after vegetation matures.
- Use of existing vegetation also reduces installation costs and risk of total planting failure.



- The site may require tillage or herbicide application prior to planting. Bare soil in areas where trees and shrubs are to be planted may also need to be planted with less competitive grasses and forbs to hold soil in place and discourage weed growth until trees and shrubs become established.
- Some replanting may also be needed to get adequate vegetation established.

Maintenance:

- Weed control is often necessary until trees and shrubs are large enough to compete on their own.
- Mowing and mulches are good methods. Tillage is not.
- Herbicides may be useful for spot weed control provided their labels do not prohibit use near waterways.
- Mulches may be necessary for initial tree and shrub survival in drought-prone regions.
- Protecting tree and shrub plantings from wildlife, such as deer, rabbits, and beaver, may be necessary in some locations.
- Periodic soil removal may be needed at the cropland edge of a runoff filtering buffer, where sediment trapping or tillage has formed a dike which prevents evenly-spread, shallow flow through the buffer.
- Periodic harvesting of buffer vegetation may be necessary to maintain vigorous plant growth for filtering and nutrient uptake; and provide marketable products.
- The maintenance schedule should be flexible and fit into the landowner's schedule

Source: AF Note - 4, *Agroforestry Notes*, USDA Forest Service, Rocky Mountain Station, USDA NRCS, 1/97

Stream Corridor Restoration Handbook

A landmark cooperative effort among an unprecedented number of federal agencies is underway to improve the health of streams.

The agencies are developing a *Stream Corridor Restoration Handbook* to serve as a common technical reference for stream corridor restoration. Use of techniques in the handbook can help improve many of the nation's 3.5 mil-

lion miles of rivers which are currently considered degraded, primarily due to erosion and sedimentation and excess nutrients. The handbook will help to boost the number of healthy stream corridors, which provide benefits such as water supplies, recreational opportunities, fish and wildlife habitat, and productive agricultural lands.



Several agencies from the Dept. of Agriculture and Dept. of the Interior, the Dept. of Commerce, the Dept. of Housing and Urban Development, USEPA, U.S. Army Corps of Engineers, Federal Emergency Management Agency, and Tennessee Valley Authority are pooling their expertise to develop the reference manual for interdisciplinary teams working on stream corridor restoration projects. The handbook also is expected to benefit agency staff, state and local governments, the academic community, private consultants, contractors, and landowners.

One of the handbook's advantages is that it will be easy to update as new information becomes available. The handbook will be distributed in the Spring of 1998. Information on the handbook is accessible via the Stream Corridor Restoration Handbook Home Page: www.usda.gov/stream_restoration.

River Corridors and Wetlands Restoration Web Site

The USEPA, Office of Wetlands, Oceans, and Watersheds has established the *River Corridors and*

Wetlands Restoration Web Site at <http://www.epa.gov/owow/wetlands/restore>. The Web Site contains information on restoration projects, proposals, ideas, and contacts. This site is intended to provide information to those involved in aquatic ecosystem restoration, and to help develop a more complete picture of restoration activities nationwide.

Users are encouraged to contribute to the Web Site by submitting information on their restoration activities and proposals, as well as by providing suggestions and comments. To submit a project, users simply complete the restoration survey form under the heading "Put Your Project On The Map".

The Restoration Web Site provides project names; descriptions; other project data; and an identification of individuals, organizations, and agencies from around the nation involved in restoration efforts. Site-specific restoration projects are listed by watershed and State to facilitate user discovery of restoration activities in their areas of interest. The project data structure accommodates the type of restoration project undertaken, partners involved, funding, restoration goals, accomplishments to date and photographs, among other information.

Restoration projects are accessible for viewing on a U.S. map by State and local watershed. The Restoration Web Site also links to EPA's *Surf Your Watershed* web site at <http://www.gov.epa/surf> and the Office of Wetlands, Oceans, and Watersheds web site at <http://www.gov.epa/owow>. By sharing restoration experiences, users can assist others in revitalizing sensitive aquatic ecosystems in their local watersheds.

The Web Site also includes information about proposals for restoration projects. This is intended to facilitate the development of restoration partnerships. By combining experience, resources and technical expertise, multiple organizations can often accomplish more than through individual efforts.

Development of the Web Site was encouraged by the work of the following Restoration Partners: *The Nature*

Conservancy, The National Fish and Wildlife Foundation, The National Audubon Society, The National Association of Service and Conservation Corps, Ducks Unlimited, The Coalition to Restore Urban Waters, the Wildlife Habitat Council, the Waterway Research Institute, American Rivers, The Izaak Walton League of America, the International City Management Association, the League of Women Voters, the Association of State Floodplain Managers, the River Network, the National Association of Counties, Trout Unlimited, the National Park Service, the U.S. Department of Agriculture, the Natural Resources Conservation Service, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency (USEPA) Office of Enforcement and Compliance Assurance, the USEPA Office of Policy, Planning, and Evaluation, the USEPA Office of Research and Development, and the USEPA Regional Offices of Wetlands, Oceans, and Watersheds.

Missouri River Environmental Assessment Program

The *Missouri River Natural Resources Committee* (MRNRC) recommended, in a report to the *Missouri River Basin Association* (7/11/97) implementation of a *Missouri River Environmental Assessment Program* (MREAP). The report states that, "In 1994, the operational changes proposed by the Corps in its Master Manual 'preferred alternative' demonstrated the need for a scientific understanding of how such changes might affect the rivers' ecosystem. The Master Manual Draft Environmental Impact Statement indicates that a monitoring plan for native fish is needed and would be developed."

The need to collect valid long-term natural resource data was one of the few issues that received support from the individuals and agencies who commented at public hearings on the Master Manual "preferred alternative". The recommended MREAP was developed by the MRNRC over the past year. Seventy-five individuals representing 12 state and 7 federal agencies contributed to development of the plan.

It's goal is "To provide the scientific basis for optimum management of the Missouri River's mainstem and floodplain fish and wildlife resources, while avoiding or minimizing conflicts with other river uses." The objectives are to understand and predict:

- Species, community, habitat and water quality responses to different flow regimes, including intra-system regulation.
- Biological response to structure addition, modification or removal.
- The impact of physical changes due to aggradation (sedimentation) in the upper reaches of reservoirs and degradation (incision) below the dams on biota and habitat.

The MREAP divides the river into 19 different sampling segments, recognizing:

- unchannelized,
- reservoir and headwater,
- inter-reservoir, and
- channelized habitat types.

The MRNRC recommended that federal authorization and appropriation for the MREAP identify a neutral federal agency (i.e. an agency with no existing river regulatory or management jurisdiction) as the recipient of funding. This federal agency would develop interagency cooperative agreements with the MRNRC member states and agencies and establish the MRNRC as the interagency organization responsible for directing program implementation. The MRNRC also recommended that authorizing legislation contain provisions that limit the lead federal agency overhead to 12% or less and index annual appropriations to inflation. It was also recommended that hydroelectric power revenues placed in trust be considered as a funding option.

The MRNRC said that a monitoring and assessment effort will be required "as long as operation and maintenance are found to affect Missouri River habitat and biological communities, or until alternative management scenarios are identified and adopted which minimize these impacts". Monitoring was proposed to occur in 7 of the 19 sampling segments at any one time. The MRNRC would review yearly progress reports, and a five year summary would be submitted to the

MRNRC for review and to aid in program refinement. An independent scientific review committee would also be established to provide Program guidance.

The proposed plan recommends establishment of seven field stations financed by the lead federal agency and operated by the mainstem states, with central support provided by the USGS/Biological Resource Division's Environmental and Contaminants Research Center (ECRC), located in Columbia, MO (with a field station in Yankton, SD). The states would be responsible for monitoring fish, invertebrates, birds, reptiles, amphibians and vegetation. Water quality parameters would be measured in association with other aquatic measurements. The ECRC would coordinate monitoring efforts, compile existing data, and act as the project database manager. Additionally, the ECRC would provide support to develop sampling protocols; conduct statistical analysis; develop hydraulic modeling; and facilitate mapping of river depth, velocity and substrate.

Focused investigations would include identification of relationships between operation and maintenance activities and impacts on habitat and biota.. These investigations would include assessment of habitat restoration efforts and special studies identified by the MRNRC. Most of the focused investigations would be accomplished using a competitive process. Each year, the MRNRC would prioritize information needs and issue a request for proposals (RFPs) to state, federal, for-profit, and not-for-profit organizations with interest and expertise. The MRNRC would then review the proposals and fund those which show promise of success and best address program needs. The MRNRC would provide the MRBA with the results of the RFP evaluation process on a yearly basis, along with results of previously funded proposals.

Contact: Mark Lastrup, USGS/BRD, ECRC/Mid-Continent Ecological Science Center, 4200 New Haven Road, Columbia, MO (573) 875-5399

Missouri River Monitoring

Starting this summer, the states of IA, MO, and NE joined forces to fund a joint Missouri River fish monitoring program. Each of the three states contributed funding to the project through MICRA. At the states' request, MICRA in turn contracted with Larry Hesse, *River Corporation, Inc.*, Crofton, NE to conduct the work.

Mr. Hesse was employed as a fisheries biologist for the NE Game and Parks Commission until 1994, where he conducted research on the River's fish populations for some 23 years. Mr. Heese is one of a "handful" of biologists with extensive research experience on the Missouri River. Under this project the three states wished to capture Hesse's expertise and experience, and extend his work into the future.

To supplement state contributions to this work, Hesse is also seeking charitable contributions from businesses along the river. Such businesses as the agricultural, navigation and power industries have long profited from the way the River has been operated and maintained by the Corps of Engineers. It is hoped that they will feel a debt of gratitude to the River, and share in the expense of restoring its ecosystem to a healthy condition.

Hesse is using a mix of sampling approaches to build on his historical database, and utilizing concepts developed for the proposed MREAP (see previous article). He hopes to eventually use only the methods laid out for the MREAP so that his work will be totally compatible with any future federally funded program. However, Hesse points out that since much of the prerestoration data is from his old program in NE, it is important to integrate the two approaches so that new data in the next century can benefit from historical comparisons.

Data presently being collected by Hesse under the MICRA umbrella will help to bridge the gap until Congress can review, approve, and hopefully appropriate funding for the proposed MREAP. Hesse's work will also serve as a field test for developing the new program and help demonstrate that a

public-private partnership can help to buy the necessary data to argue for and evaluate new restoration projects and changes to the operating plans of the mainstem dams.

Hesse estimates that it will cost approximately \$110,000 annually to sample eight sites between the tailwater of Fort Randall Dam, SD and St. Joseph, MO. The three states have contributed about half that amount, it is hoped that others will match state contributions in order to keep the effort going.

Drawing on a career-long commitment to the River, Hesse's desire is to assure that repeatable, defensible, and long-term data is available for the foreseeable future to ensure the long-term preservation of the unique fish and wildlife resources of the Missouri River and its tributaries.

Contact: Larry Hesse, *Rivers Corporation, Inc.*, 88896 552nd Ave., P.O. Box 395, Crofton, NE 68730, (402) 388-4276, FAX (402) 388-4128, email: reihesse @holonet.net

Miscellaneous River Issues

AZ Diversion Project Law Suit - Officials from the Central Arizona Project (CAP), which brings water from the Colorado River to central AZ cities, on 7/14 filed a lawsuit to stop the federal government from pursuing a project that the feds say is needed to protect AZ fish. The 1994 study upon which the federal program is based concluded that fish species from the Colorado River could infiltrate central and southern AZ rivers via the CAP and prey on endangered native fish. The study recommended that the Bureau of Reclamation construct fish barriers, monitor for the presence of non-native fish presence over the next century, and conduct other research and conservation projects. But the CAP called the study "fundamentally flawed," for example by finding that one species of fish would migrate through rivers that the CAP says are dry. CAP officials also argue that the study applied an "overly broad" definition of what constitutes jeopardy to the fish; that the funds to be spent on protecting

the fish are "an abuse of discretion" by Interior Secretary Bruce Babbitt; and that the conservation project would add nearly \$150 million to the \$4.7 billion that the CAP is already projected to cost. Source: National Journal's *GREENWIRE The Environmental News Daily*, 7/22/97

Eastern Water - Six small water districts in TN have formed an alliance to ease water-supply problems in a fast-growing mountaintop enclave, a move that "could provide a blueprint" for other water-strapped areas in the Southeast. The agreement among the Cumberland County, TN, districts comes at a time when water supply "could well develop into one of the more significant issues for the Southeast," according to Justin Wilson, deputy to TN Gov. Don Sundquist (R). Wilson said, "There is some evidence ... that the [water] blood fights out West are moving east." Cumberland County Executive Brock Hill says small districts acting independently of one another create more environmental problems and increase overall costs when they try to secure their own water sources by damming waterways or diverting flows. With help from the TN Dept. of Environment and Conservation, Hill pulled Cumberland water district officials together to look for a single, adequate water source for 42,000 users. Meanwhile, the Army Corps of Engineers promised to make the group's project a "top" funding priority. Source: Motoko Rich, *Wall Street Journal* online, 9/10.

Fish Consumption Advisories Up 26% - The number of lakes, rivers and other U.S. waterways under fish consumption warnings because of chemical contamination rose 26% last year over 1995, according to a USEPA report released on 7/23. The report said 2,193 advisories were issued in 1996, representing 5% of the U.S.'s total river miles and 15% of total lake acres. Advisories increased for mercury, PCBs, chlordane and DDT. Source: National Journal's *GREENWIRE The Environmental News Daily*, 7/29/97

Flood Protection Compromises Fish Conservation - A sharp increase in emergency construction projects along OR waterways in the wake of heavy flooding last year has created conflicts

with fish-conservation efforts. The number of construction projects since the deluge of 1996 has doubled, forcing state officials to make "tough decisions about balancing attempts to restore dwindling fish runs" with projects to clean up flood damage. The increased workload is "overwhelming" regulators and jeopardizing \$26 million set aside by the National Resources Conservation Service for 300 watershed-protection projects. The lack of environmental oversight "came to light recently" when an *Oak Lodge Water District* construction project polluted the Clackamas River for several days. Source: National Journal's *GREENWIRE The Environmental News Daily*, 9/19/97

GA Water Settlement - The USEPA and GA environmental groups agreed in early August on a plan to clean pollution from thousands of miles of waterways in the state within the next eight years. The agreement ended a three-year lawsuit in which the state *Sierra Club* and other environmental groups claimed the USEPA "wasn't forcing the state to comply" with the federal Clean Water Act. Under the settlement, the EPA would require the GA Environmental Protection Division (EPD) to monitor pollution in the tributaries, estuaries, lakes and rivers of 14 river basins; establish pollution limits on any newly found problem areas; and begin pollution-abatement efforts within 18 months. The first pollution limits would be placed on the Savannah and Ogeechee rivers by 1999. A plan to clean the Chattahoochee and Flint rivers would have to be completed by 2002. Plaintiffs' attorney Doug Haines said that the plan could cost businesses and local governments "a little more to start," but that it would be "much more effective" than the current program. But EPD water-quality director Allan Hallum said the settlement "is not a new approach. This is a narrow band of stream segments that we weren't dealing with as rapidly as somebody wanted." U.S. District Judge Marvin Shoob on 8/5 agreed to the settlement, which still must be reviewed by the 11th U.S. Circuit Court of Appeals. Meanwhile, the USEPA is facing similar lawsuits in at least 20 states. Source: National Journal's *GREENWIRE The Environmental News Daily*, 8/8/97

KY Fried Chicken - An Atlanta-based chicken processor's plans to build a plant in rural Clinton County, KY, has created "fear that the plant could create an environmental mess." The new *Cagle's Inc.* plant would be two miles from Lake Cumberland, the source of much of the region's drinking water and a "backbone" of its tourism industry. The KY *Sierra Club* believes the plant and feeder houses that supply it will contaminate groundwater. But "so far, few Clinton County residents don't share the environmentalist's concern." The plant would bring permanent jobs and benefits to "a work force used to seasonal jobs ... [or] minimum-wage work". Source: Jane DuBose, *Atlanta Journal-Constitution*, 8/17.

KY Logging Boom - As logging in KY nears record levels, the state is moving to better protect forests from "environmental abuses." The logging boom, spurred by an increased demand for timber and curtailed harvests in the Pacific Northwest, has led environmentalists to demand stricter state regulation of logging. Forestry experts said it has taken 90 years for some state forests to recover from the record-setting tree harvest in 1907. Gov. Paul Patton's (D) administration has proposed to tighten current controls -- which rely almost entirely on voluntary compliance -- by licensing loggers and mandating best management practices. The proposals, opposed by property-rights advocates and the timber industry, will be introduced next year in the state's General Assembly. Source: Andrew Melcykovich, *Louisville Courier-Journal*, 8/15).

LA Environmental Enforcement Contract Overturned - A "sharply divided" LA Supreme Court on 9/9 ruled that LA Attorney General Richard Ieyoub's contract with private law firms to track down polluters is unconstitutional. Under a 9/94 contract, Ieyoub hired 14 law firms to identify polluters and force them to clean up and pay for environmental damages, offering the firms 25% of the restitution they collected. The court upheld a 12/94 decision by state District Judge A. Foster Sanders, which said the contract violated a state statute requiring all recovered money to be paid into

the state treasury. Ieyoub said he was "deeply disappointed" with the decision and will ask the Supreme Court to reconsider. Source: Joe Gyan, *Baton Rouge Advocate*, 9/10

MN Gasoline Leak - MN environmental officials have discovered a "huge pool" of gasoline stretching from a Rosemount, MN, refinery to the backwaters of the Mississippi River. Mark Toso of the MN Pollution Control Agency (MPCA) said "at least tens of thousands of gallons" of leaded aviation gas has leaked from *Koch Refining Co.*'s 1.5 million gallon tank since 1992, when state officials found 30 leaks during an inspection. Leslie Davis of *Earth Protector Inc.* blasted Koch and the MPCA for delaying action and not publicizing the problem. But state officials said the leak did not pollute any drinking water and "only minimally damaged" the area. Source: Tom Meersman, *Minneapolis Star Tribune*, 9/11.

MN River Cleanup - According to recent studies, water quality is improving in the Minnesota River, the state's "most-polluted" waterway. Scientists at a late July conference in St. Peter, MN, said the improvement can be attributed to less soil erosion from farmland and decreased phosphorus pollution from two sewage-treatment plants along the river. Source: Dean Rebuffoni, *Minneapolis Star Tribune*, 8/13.

Natural Wetlands Out Perform Replacements - Natural wetlands are "substantially" better providers of flood control, water filtration and wildlife habitat than artificial ones, according to a new study by the OH EPA. The study marks the first time the state has compared wetlands quality under a 1991 law that allows developers to destroy natural wetlands if they create new ones. Siobhan Fennessy, the OH EPA biologist who conducted the research, studied 11 artificial wetlands throughout the state and compared them to natural wetlands. Fennessy noted the artificial wetlands she examined -- none more than five years old -- may not have had adequate time to mature, and that healthy substitutes are possible. But she backed proposed state standards that would require three acres of wetlands to be created for

each acre destroyed, and would give less protection to natural wetlands deemed to be of low quality. The study was "seized upon" by environmentalists who said the findings undermine the state's proposal. *National Audubon Society*'s Julie Sibbing said the state should approve the destruction and replacement of wetlands "only when absolutely necessary" and should classify some wetlands as untouched. Source: National Journal's *GREENWIRE The Environmental News Daily*, 8/7/97 .

NC Watershed Protection Law - In a ruling that "could help end a debate over whether water quality takes precedence over the rights of property owners," the NC Supreme Court on 7/24 upheld the state's watershed protection law. The ruling overturned a 9/96 decision in which the state Court of Appeals held that the law, designed to protect watersheds used as sources of drinking water, gave state environmental regulators unconstitutional authority to control development around rivers and reservoirs and infringed on property owners' rights. Environmentalists were pleased with the decision. Attorney John Runkle of the *Conservation Council of NC*, who defended the law said, "It certainly told the Environmental Management Commission (EMC) that they can regulate watersheds without being micro-managed by the legislature." The EMC, which sets NC's pollution regulations, has used its authority to restrict landfills, housing density, sewage discharges and storage of hazardous materials in areas that drain into the state's waterways. Source: James Shiffer, *Raleigh News & Observer*, 7/25.

NM Diversion Project Law Suit - As a portion of the Rio Grande dried up in 4/96, killing 11,000 endangered silvery minnows, a NM water district kept its canal "brim-full" of water it had diverted from the river, a U.S. Fish and Wildlife Service (USFWS) report says. According to the report, released by the Santa Fe-based *Forest Guardians* under a Freedom of Information Act request, the *Middle Rio Grande Conservancy District* refused to cooperate for several "crucial" days during the minnows' spawning season, and it reneged on a pledge to release some of

the water it had seized -- even though the water legally belonged to the USFWS. District manager Subhas Shah at one point ordered the release of some water, but the report says that never happened because "locals were at the dam with guns and [they] were going to cause trouble if the gates were opened". *Forest Guardians* President Sam Hitt said the report proves the federal government should have punished the water district for violating the Endangered Species Act (ESA). Instead, the district in 5/97 accepted a plan to begin habitat restoration for the minnow. So far, the effort to protect the minnows appears to be working. But "it remains to be seen....whether the district will remain cooperative in a (future) drought". Hitt said his group plans to sue the district under the ESA, "If the government won't do it, we will. This was a deliberate attempt to kill the last minnow in the Rio Grande". Source: National Journal's *GREENWIRE The Environmental News Daily*, 8/7/97

OH River Mussels - In our last issue of *River Crossings* we reported from an *Associated Press* article that "OH enforces a daily take of 15 mussels/person that can be used only for bait". Randy Sanders of the OH Dept. of Natural Resources (OHDNR) informed us that OH's law now prohibits possession of **any** mussels in the state unless the person has in his or her possession a valid scientific collector's permit issued by the OHDNR.

Red River (MN) Flood Control - "Despite the threat of a lawsuit by environmentalists," the Army Corps of Engineers on 8/4 tentatively approved a flood-control dam on a tributary of the Red River in northwestern MN. The Corps said it would issue a final permit for the Marsh Creek project if a local watershed district agrees to mitigate the project's expected harm to wetlands. But environmentalists "contend that ... local watershed agencies are just giving lip service to the idea of restoring wetlands." Environmentalists are especially intent upon blocking or forcing major changes to the dam proposal because it is the first of perhaps 33 dams and other flood-control projects planned

on tributaries of the Red." Sixteen environmental groups oppose the project, while the *MN Center for Environmental Advocacy* has threatened to sue to halt it. Source: Dean Rebuffoni, *Minneapolis Star Tribune*, 8/5

Tribe Contributes to Reward for MN Polluters - The Prairie Island Mdewakanton Dakota Tribe has donated \$5,000 to a MN state fund that will reward people for information leading to the arrest of people who violate environmental laws. The fund was created in mid August to elicit information about the cause of a 7/97 fish kill of 7,500 brown trout in Hay Creek near the tribe's reservation. State officials say the deaths may have been caused by a chemical that was dumped or washed into the creek. A segment of the creek near Red Wing, MN has been the focus of a \$160,000 state fish-habitat restoration project. Source: Dean Rebuffoni, *Minneapolis Star Tribune* 8/6 and 8/26.

TVA Lands - The TN Valley Authority's (TVA) delay in deciding how to use lands surrounding its Columbia Dam has sparked "a firestorm of controversy," pitting environmentalists against the federal agency and state officials. The TVA bought 12,800 acres at the planned dam site in Maury County, TN, in the 1960s, but abandoned the partly constructed dam in 1983 after the discovery of a rare mussel colony upstream. Now, the TVA wants to divest the land as it shifts away from its nonpower programs. A coalition of developers and business leaders want the land set aside for recreational and residential development -- a move that is supported by about 85% of local residents, according to a TVA poll. But environmentalists, who want the land preserved, are "outraged" by the TVA's delay, saying it will favor those who are pushing for development. TVA spokesperson Barbara Martocci said the agency, which for two years has said it would have a recommendation by this summer, would be making its decision "soon". Source: Alisa LaPolt, *Nashville Banner*, 9/1.

UMR Barge Cleaner Guilty - A barge-cleaning company on 8/20 pled guilty to illegally discharging pollutants into the Mississippi River. A federal

charge filed on 7/24 alleged that *LA-based TT Barge Cleaning Inc.* had released untreated waste water and "dozens" of barrels of rust, sludge and mud into the river since 1986. Court records show that the government had no evidence that company officials, including CEO Roy Toepper, were aware of any illegal activity. State, federal and local investigators "raided" the company site on 2/4. The government recommended fining the company \$300,000 and putting it on probation for five years while it removes wastes from the river, implements waste-handling training, and hires an independent auditor to monitor its environmental performance. Source: *AP/Journal of Commerce*, 8/12.

UMR Environmental Management Report - Improved environmental management is needed to stem the threat to water quality, sport fishing and waterfowl in the Mississippi River, according to a study led by the Army Corps of Engineers. A draft report of the *Upper Mississippi's Environmental Management Program* found that conditions in even the most healthy reaches of the river's upper basin are "at least partially artificial, nonsustainable and in a recognized state of degradation." The report recommends doubling the amount spent on environmental management to \$33.2 million. Source: Bill Lambrecht, *St. Louis Post-Dispatch*, 9/10.

WV Mountaintop Removal - Between 15% and 25% of the mountaintops in south-central WV "are being leveled in massive strip-mining operations," reports *US News & World Report*. The procedure, called mountaintop removal, is also practiced in southeastern KY, eastern TN, southwestern VA and western PA. But its impact "has been especially intense" in WV, where low-polluting coal is plentiful and "weak environmental laws and lax regulators" have made mining's effects "more profound." If the current pace continues, environmentalists predict that half the peaks in southern WV will be gone within 20 years. Debris from the mining is dumped into adjacent valleys, polluting streams and water wells and leaving some areas more vulnerable to floods. Valley fills have already buried more than 100 miles of stream beds, according to Cindy Rank



of the *WV Highlands Conservancy*. And "hardly any mining firm's reclamation projects abide by" environmental rules; waivers of such rules are "routinely granted." Recent floods have prompted WV officials to re-examine the state's valley-fill rules and "to look hard" at watershed drainage and ditching systems. Since 1988, the state has doubled the number of mining inspectors to about 100. But state fines for violations average just \$800. At the federal level, the Interior Dept.'s Office of Surface Mining "doesn't have the time or personnel" to address the issue. The 1977 Surface Mining Control and Reclamation Act "is largely silent" about the practice. Coal companies admit they are changing the landscape, but "say, essentially, that they are doing the least-destructive job that they can to extract a resource the whole world craves". Source: Penny Loeb, *U.S. News & World Report*, 8/11

Western Rivers - Deteriorating Western rivers and riverside habitat should be left alone "to let nature heal the wounds" caused by logging, grazing and dam building, concludes an *OR State University* study published in the current issue of the journal *Fisheries*. The study's authors, J. Boone Kauffman and Robert Beschta, said restoration efforts such as recreating spawning pools with hatchery fish or rebuilding river banks may further damage waterways plagued by erosion, pollution and low water flows. Instead, the authors said their study of habitat-restoration projects in eastern OR showed the "single most effective" way to restore fish habitats

is to stop livestock grazing. And the "easiest" way to improve river quality is through prevention -- maintaining ecosystems that have not yet been damaged. Source: *AP/Portland Oregonian* online, 8/18.

ESA Rewrites

"After five years of bitter feuding, key Senate Republicans and Democrats" unveiled a new bill on 9/16 to reauthorize the Endangered Species Act (ESA). Interior Secretary Bruce Babbitt joined Sens. Max Baucus (D/MT), John Chafee (R/RI), Dirk Kempthorne (R/ID) and Harry Reid (D/NV) at a press conference announcing the bill. But Babbitt said President Clinton hasn't yet decided whether to endorse the measure.

Baucus, the ranking Democrat on the *Senate Environment and Public Works Committee*, said the bill would improve the use of science and encourage conservation and recovery so that more species could be delisted from the ESA. Both the public and landowners would carry more influence with the federal government under the bill, he said. The bill would also create more financial incentives for landowners to conserve prime habitat and expand the role of states in enforcing the law. Babbitt praised the bipartisan proposal in part because it would codify the administrative changes he has implemented, including the expansion of habitat conservation plans (HCPs) and a "no surprises" policy. Under HCPs, landowners agree to preserve certain tracts of land in exchange for being granted the right to develop other parcels. The "no surprises" policy exempts landowners from future ESA requirements for up to 100 years if they voluntarily protect species already known to be on their properties.

Still, Babbitt -- who emphasized that he wasn't speaking on behalf of the administration -- said the bill was just a starting point for debate and could be improved. Chafee, the chair of the Senate committee, said he would hold a hearing on the bill and schedule Committee votes before the end of Sept.

Many environmentalists, however, "quickly denounced" the Senate bill.

The *Endangered Species Coalition*, a collection of more than 240 green groups, said the measure "is sorely lacking in provisions needed to ensure that species recover." Coalition leaders -- including representatives from the *Earthjustice Legal Defense Fund*, *Sierra Club*, and *Defenders of Wildlife* -- are instead backing a reauthorization bill proposed by Rep. George Miller (D/CA). The *Environmental Defense* fund said the Senate bill failed to include adequate incentives for landowners to protect species.

Meanwhile, the *Endangered Species Coordinating Council*, which includes the *National Cattlemen's Beef Assn.* and *National Mining Assn.*, came out in support of the Senate bill. W. Henson Moore, president of the *American Forest & Paper Assn.*, a coalition member, said the bill created a "balanced, workable approach" for the ESA.

The House bill introduced by Miller would increase protections for fish and wildlife, while addressing some concerns of property-rights activists. Miller, the top Democrat on the *House Resources Committee*, said he was reaching out to Republicans and landowners with his bill. The bill would provide several tax breaks to landowners who enter agreements with the feds to protect species. The bill also would require designation of "survival habitat" needed to keep a species alive at the time of its formal listing, and it would expand the current number of species the federal government hopes to remove from threatened and endangered status.

The bill put Miller somewhat at odds with the Clinton administration's wish list for reauthorizing the ESA. "Perhaps most controversial" is Miller's proposal to change the administration's "no surprises" policy, which ensures landowners will not be subject to future restrictions for up to 100 years if new endangered species are found on their property after they begin managing their land to protect species that are already present.

The administration wants the policy -- under which "taxpayers pick up the tab" for any future protections found necessary to save a species -- codified into the ESA. But some environmental-

ists object to the long-term guarantee to landowners. Miller's bill would require landowners to secure a bond insuring them against future protection requirements, and it would create a "streamlined process for owners of five acres or less," a group exempted from the current administration's policy. It would also subject the habitat-conservation plans that are developed under the "no surprises" policy to independent scientific peer review and allow legal challenges to the plans.

Republican Reps. Connie Morella (MD) and Christopher Shays (CT) are among the bill's cosponsors. Northwest supporters in the House include Earl Blumenauer (D/OR), Norm Dicks (D/WA) and Jim McDermott (D/WA). Last year, the *House Resources Committee* fought openly over ESA reform. In contrast, this year Miller said he is informally discussing the issues with other members, including committee chair Don Young (R/AK) and Jim Saxton (R/NJ), who chairs the *Fisheries, Wildlife and Oceans Subcommittee*. But GOP sources said Miller's staff has refused to meet with Young's staff and expressed discouragement about Miller's approach to reform. "An industry source" described Miller's bill as catering to environmentalists.

Sources: National Journal's *GREENWIRE The Environmental News Daily*, 7/31 and 9/17/97

Climate Change

President Clinton launched a campaign on 7/26 to build support for actions to prevent global climate change, seeking to convince the public of the "urgency of a problem that, in many minds, looms far in the future, if it exists at all".

At a White House meeting with seven "eminent" scientists, Clinton said, "It is no longer a theory, but now a fact that global warming is for real. ... We have evidence, we see the train coming, but most ordinary Americans in their day-to-day lives can't hear the whistle blowing". The scientists, including three Nobel Prize winners, took turns painting a near-apocalyptic

picture of life as the Earth heats up. Physicist Henry Kendall of *MIT* said climate disruptions in the tropics could spur millions of "environmental refugees" to head north to richer, more temperate nations. Other affects of global warming include killer heat waves, encroaching seas, more disastrous floods, and the northward spread of tropical insect-borne diseases.

Alden Meyer of the *Union of Concerned Scientists* said Clinton appears to be seizing climate change as the principal issue for the rest of his administration.. Meyer said, He's [been] persuaded that this is the environmental issue he is going to be judged on 50 years from now".

In a 9/15 meeting with the CEOs of 13 environmental groups, Clinton agreed that the current international effort to reduce greenhouse-gas emissions to 1990 levels would not go far enough to prevent global climate change, but he acknowledged Senate demands that a treaty with binding emissions limits must include developing nations. Clinton said he will decide the position that U.S. negotiators will take at the December UN summit in Kyoto, Japan, by 10/20. The environmental group leaders advised Clinton to "push for an aggressive global warming pact."

Meanwhile, industry leaders were critical of the president's new campaign. *Ford Motor Co.* chief Alex Troutman said the auto industry would mount its own public-education effort, employing "equally eminent" scientists to present "our version of the science". Jerry Jasnowski, president of the *National Assn. of Manufacturers* said, "We should avoid a herd mentality that says, 'Sign now, ask questions later'".

An "unusual" coalition of manufacturers, transportation companies, African-American and senior citizens' groups launched an advertising "blitz" on 9/9 aimed at pressuring the Clinton administration not to agree to limits on greenhouse-gas emissions. The \$13 million campaign will seek to convince the public that prices of basic goods will rise if the government pursues emissions reductions. The *Global Climate Information Project*, whose sponsors include the *National Assn. of*

Manufacturers, Air Transport Assn. of America, National Cattlemen's Beef Assn. and United Mine Workers of America, warn of a "50-cent per gallon gasoline tax and higher prices for everything from heat to food to clothing." The campaign will feature radio spots, ads in national newspapers, and a site on the World Wide Web.

The campaign drew immediate criticism from environmentalists and the White House. Kelly Sims of DC-based *Ozone Action* called the coalition campaign "totally distorted." Sims said the coalition was "trying to scare the public before there's anything to be scared about.... No one has talked about a gas tax" The *Global Climate Information Project* also prompted a "sharp response" from industries that support an international treaty. Michael Marvin of the *Business Council for Sustainable Energy*, a coalition of alternative energy companies, said the project was "using models that assume a worst-case, least-realistic scenario."

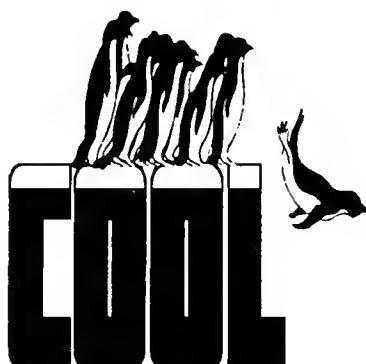
In a 7/21 interview on *National Public Radio's Diane Rehm Show*, Interior Secretary Bruce Babbitt is reported to have said that oil and coal companies have "joined in a conspiracy to hire pseudo-scientists to deny the facts" and make arguments "that are essentially fraudulent." The newsletter *EPA Watch* reports that Babbitt also said, "I think the energy companies need to be called to account because what they are doing is un-American in the most basic sense."

Recent reported evidence of possible global climate change include the following:

- Sea ice around the Antarctic region may already have shrunk as much as 25% from the mid-1950s to the early 1970s, according to a study from Australia published on 9/4 in the journal *Nature*. "But the cause and purport of the phenomenon -- and whether it might be related somehow to global warming -- are entirely unknown. "Numerous scientists believe" the decline could have had a "substantial effect" on local ocean circulation and climate "and possibly broader effects worldwide".

- Researchers say a decline in

Antarctica's Adelie penguin population is the result of warmer average temperatures that have caused declines in "seasonal ice pack" and krill



-- "a pivotal link in the Antarctic food chain". Adelie populations have dropped from 15,200 breeding pairs in 1975 to 9,200 today. Average annual air temperatures on the Antarctic Peninsula have climbed by 5° F over the last 50 years, 10 times faster than the global rate, with mid-winter temperatures up 9°. Scientists don't know if the warming is part of a natural climatic cycle or is caused by an increase in greenhouse gases from human activity.

- If carbon-dioxide (CO²) levels in the atmosphere continue to increase at the present rate, the "essential marine" circulation system that "dominates weather patterns" in the U.S. and Europe could be "completely shut down," according to a study published in the 8/28 issue of the journal *Nature*. "Normally," warm, salty surface water from the equator flows north in the Atlantic Ocean until it hits colder, less salty water around Greenland, where it cools, absorbs atmospheric CO², sinks and returns south. This "conveyor belt ...sheds its heat into the air, keeping Europe's weather comfortable." But if CO² emissions continue to increase at 1% a year, physicists at the *University of Bern*, Switzerland, found that "irreversible changes" would occur to this process, and "Europe's weather would become unstable" and much less CO² would be trapped by the water. The scientists said policy makers should "take into account critical limits on the rate of greenhouse gas increase" to avoid this calamity.

- A study published on 9/11 in the journal *Nature* suggests that rising levels of greenhouse gases in the atmosphere may be changing the "favorable atmospheric conditions" in which humans evolved and may trigger a shift in world grain species. *University of UT* geochemist Thru Cerling and biologist Jim Ehleringer compared more than 500 fossilized and modern animal teeth worldwide and found that a "slight" decrease in carbon dioxide (CO²) levels nearly 7 million years ago "significantly altered" global ecosystems, including the plant species that animals fed upon. A small shift in global temperatures in coming decades could have similar, "profound effects" on modern food grains, they believe.

- Glenn Juday, a professor of forest sciences at the *University of AK*, says global warming is already "an unfolding reality" in the nation's northernmost state. At a conference in early Sept. at the *University of NH* Juday presented evidence that average temperatures in AK have risen since the mid-1970s, while precipitation has declined, with both factors contributing to a rise in insect infestations. Sink-holes caused by melting permafrost have caused "extensive" damage to roads, buildings and airport runways.

- "Lingering effects" of a period 500 years ago called the Little Ice Age may be helping to slow global warming, according to a study published 8/29 in the journal *Science*. Researchers at the *University of NH* said the temperatures of cold winds over the North and South poles haven't changed since the "global chill" period began in 1400. Karl Kreutz of the university's *Climate Change Research Center* said, "This shows we are still feeling the effects of the Little Ice Age. This could be modifying the temperatures caused by the greenhouse effect." "Another scientist said the research...raises the possibility that the warming effects of greenhouse gases might be worse than believed"

On the positive side of the issue, the global campaign to reduce acid rain is "beginning to pay off" in much of Europe, the *UN Economic Commission for Europe* announced on 8/26. Surface-water studies show that "sulfate concentrations are falling at nearly all

...monitoring sites and... the decline has accelerated since 1990." Nitrogen levels have stabilized. One indicator lake in southern Norway, Lake Storgama, has experienced a nearly 33% drop in the sulfate concentration and a 60% increase in alkalinity, marking a "spectacular improvement." Alkalinity in lakes has risen nearly everywhere in Europe in the 1990s, except in the UK. The study concludes that because the lake improvements have coincided with stable nitrogen levels, "phenomena other than nitrogen deposition...are responsible for changes in water quality in the 1990s". However, the study said that lakes in eastern Canada and the American Northeast and Midwest showed no signs of recovery. Acidity levels in some lakes have increased despite dropping sulfur emissions.

On the opposite side of the issue, "A growing number of scientists contend" that the sun's variability "might rival human pollution as a factor in climate change," reports the *New York Times*. "Some research, though sketchy and



much debated, suggests that the sun's variability could account for virtually all of the global warming measured to date."

In recent years, scientists have established "firm" links between the sun's varying activity and conditions on the Earth. Three key variables are the sun's brightness, which is believed to affect temperatures; its ultraviolet radiation, which is seen to affect

winds and the ozone layer; and its magnetic storms, which are seen as affecting rainfall and cloud cover. "The biggest correlation" in the data occurred from about 1640 to 1720, when the number of sunspots dropped sharply and the Earth cooled by about 2 ° F. Sallie Baliunas of the *Harvard-Smithsonian Center for Astrophysics* in Cambridge, MA, who has questioned the theory of global warming caused by emissions of greenhouse gases, has studied records of the last 120 years and believes the sun is responsible for up to 71% of the Earth's temperature shifts.

Skeptics, however, say the Sun-Earth connections are "interesting but insufficient to explain satisfactorily the drama of climate change, which they insist is mainly driven by the rise in carbon dioxide" in the atmosphere. James Hansen of the *Goddard Institute for Space Studies* in NY said the sun's effects might be significant "but smaller than other mechanisms we already know about". Hansen also points out that "the long-term trend of solar energy absorbed by Earth is less than one watt per square meter" averaged over the planet's surface, while heating by industrial greenhouse-gas emissions is about 2.5 watts, "which could increase to five or six watts in the coming century".

Sources: National Journal's *GREEN-WIRE The Environmental News Daily*, 7/25, 8/5, 8/6, 8/29, 9/2, 9/4, 9/9, 9/10, 9/16, 9/23, and 9/25/97

Environmental Protection at all Costs

Sixty percent of U.S. adults say that environmental protection is "so important that requirements and standards cannot be too high, and continuing environmental improvements must be made, regardless of cost," according to a survey released by GOP polling firm *Public Opinion Strategies* at a Midwest Republican Leadership Conference held in August.

The 60% figure is up from a low point of 52% taken in a similar poll in 10/92, but down from a peak of 80%

in 6/89, before the 1991-92 recession. When asked to choose from a list of which environmental concern should receive the highest priority in their state, 30% said ensuring safe drinking water; 20% wanted assurance of proper disposal of toxic wastes; and 17% said cleaning up rivers and lakes. Thirteen percent said reducing air pollution should be the top priority, while 8% cited cleaning up hazardous waste sites, and another 8% cited garbage and trash disposal.

The poll surveyed 800 registered voters from 8/16 to 8/19; the margin of error was + / - 3.5 %.

Source: National Journal's *GREEN-WIRE The Environmental News Daily*, 9/3/97

Democrats vs Republicans Environmental Poll

Democrats have a huge edge over Republicans when it comes to public perception about environmental protection, according to a poll conducted for the *Wall Street Journal* and *NBC*.

When asked which party "would do a better job...protecting the environment," 51% of the voting-age respondents chose the Democrats, while only 12% chose the GOP. Some 19% of respondents said the parties would perform "about the same," and 11% selected neither party.

The 39-point advantage to the Democrats was dramatically larger than the 28-point advantage recorded in 5/96, when the same question was asked. In 1989, when the question was first asked, respondents preferred the Democratic approach by 21 percentage points. Before this year, the highest split between the parties was recorded in 12/95, when respondents sided with the Democrats by 32 percentage points.

In this year's poll, 50% of respondents chose the more activist candidate when asked whether they would support a congressional candidate "who says that the federal government needs to be more active in dealing with issues such as affirmative action, environmental regulation, and economic

policy," versus one "who says that the federal government interferes too much in issues...that are better decided by the private marketplace and individuals." Forty-two percent chose the candidate who felt "government interferes too much."

The telephone poll by Democratic pollster Peter Hart and GOP pollster Robert Teeter surveyed 2,004 adults, and was conducted from 9/11 to 9/15. It has a margin of error of +/-2.2%.

In an accompanying *Wall Street Journal* article Jackie Calmes reports that with the economy booming and the balanced-budget deal completed, the public is turning its attention to "often-obscure" issues like the environment and education. "Environmental groups...are telling politicians, that with economic issues off the table, such causes as clean air, water and ozone protection gain prominence. GOP leaders, acknowledging they can't compete fully with Democrats on green issues, go so far as to seek photo opportunities back home planting trees and joining river cleanups."

Political analyst Stuart Rothenberg says the debate over the USEPA's new clean-air standards has come to be a defining one in the battle between GOP moderates and conservatives

Source: *Wall Street Journal*, 9/19

Deformed Frog Research - Public Involvement

U.S. and Canadian residents are being asked to help USGS scientists in the investigation of deformed frogs, toads, and salamanders. Citizens are encouraged to report sightings of both normal and malformed amphibians that are encountered during hiking, fishing, or other outdoor related activities. "We need rigorous scientific investigations as well as observations from the general public to understand the observed decline in North American amphibian populations and the increase in reports of deformed amphibians," said Denny Fenn, Chief, Biological Resources Division of the U.S. Geological Survey.

The North American Reporting Center for Amphibian Malformations

(NARCAM) is an Internet Web Site maintained by the USGS Northern Prairie Science Center in Jamestown, ND. NARCAM provides information on the geographic distribution of amphibians and makes that information readily available to scientists who are investigating the problem.

The Web Site (<http://www.npsc.nbs.gov/narcam>), which is jointly funded by the USGS and the USEPA, provides background information on the problem in common-language terms, maps of known incidences, photographs of malformed frogs, and sources of additional information. The site also has an easy to use data entry form through which anyone can report an observed malformation. The report form can also be used to record the absence of malformations in a location if the observer has examined several animals.



Scientific concern began in 1995 when middle school students on a field trip reported a high incidence of leopard frogs with misshapen, extra, or malformed limbs in a farm pond in southern MN. Since then, these and other malformations, including missing and misplaced eyes, have been reported among many amphibian species in several states and provinces across the continent. Efforts to determine the cause or causes of the problem are driven by concern both for amphibian populations and for human health.

Like the canaries that miners once carried to detect poison gases, amphibians may deserve attention because they are especially sensitive to chemical contaminants and other stressors in aquatic environments.

Contact: Dave Fellows at (701) 252 5363, x5514

Political Lobby for Fishermen

The *Fishable Waters Coalition Inc.* (FWC) will be the voice for recreational anglers in the nation's capital as Congress once again considers reauthorization of the Clean Water Act (CWA). "The fisheries community has never really been an active participant in the CWA debate said Norville Prosser, vice president of the *American Sportfishing Association* (ASA). "In the past, the debate has been led by people who were concerned about human health. I see the current reauthorization process as one of the last and best opportunities to make wholesale improvements in our nation's fisheries."

Consequently, Prosser and the ASA spearheaded the founding of FWC as a non-profit lobbying corporation. With *B.A.S.S.*, *Trout Unlimited* and the *Izaak Walton League* among its active members, the FWC will be used to raise money to fund a campaign to change the CWA for the betterment of fish. "We have done excellent work in removing public health contaminants from our nation's surface waters, but we haven't made a lot of progress in many waters to make them more fishable," Prosser said.

At the *Wrangler/B.A.S.S. National Championship* fishing tournament this spring, Prosser told *B.A.S.S.* conservation directors about the fisheries changes that the FWC will propose for the act. They include:

- **Community-Based Watershed Restoration** - Provide financial and technical assistance and incentives that encourage and support community-based watershed conservation and restoration, largely within existing authorities at all levels of jurisdiction.
- **Effective Management of Nonpoint Pollutants** - Focus EPA grant programs on nonpoint-source control.
- **Maintaining Sufficient Instream Flow for Fisheries** - Create incentives for more efficient water use, such as in irrigation, and direct water savings to accomplish instream flow objectives, restoring the biological integrity of the nation's waters.

- **Reconnecting Rivers and Floodplains**

- Create incentives to landowners so their lands can be farmed during non-flood periods, but would allow such lands to be inundated during years of high water. River fisheries could be greatly improved by reconnecting fertile bottom lands during floods.

- **Increasing Emphasis on Urban Waters**

- Put more resources and greater emphasis on creating and maintaining healthy fisheries in urban and metropolitan areas.

"I am really proud of the progress we have made so far, but this will be a long, hard campaign," Prosser said. "We have set our goals high, but if we accomplish even a portion of them, we will do more to improve fisheries in our country than anything we have done since the CWA was originally passed 25 years ago."

Source: Robert Montgomery, *B.A.S.S. Times*, 8/97

ANS Regulations/Guidelines May Be Needed

There is evidence that regulations and guidelines can play an important role in minimizing the spread of Aquatic Nuisance Species (ANS)

According to an article by William (Jay) Rendell, Exotic Species Program Coordinator, MN Dept. of Natural Resources (St. Paul), the majority of boaters recently surveyed in MN, OH, and WI said that regulations would be "very to moderately effective" at getting them to take steps to prevent spreading nuisance species. In the same survey only about 10% said they would not be influenced by regulations.

The fact that a significant percentage of those surveyed would not respond to guidelines suggests that enforcement, including penalties, is necessary.

MN's experience with the spread of Eurasian watermilfoil is evidence that regulations can be effective. Before state regulations and education efforts targeting boaters were established, 12-15 additional infested lakes were identified per year. In subsequent years, the annual rate of discovery of infested lakes dropped to between 2 and 7 per year.

Education of the regulated community is another important way to encourage people to follow guidelines and regulations. When Midwest boaters who did not take precautions to prevent spreading ANS were asked why, they gave two primary reasons, either they were not at infested waters or they did not know what to do. Low public awareness is a key concern; if the target individuals don't know that regulations and guidelines exist, we can't expect them to be followed.

Rendell concludes that to help prevent the introduction and spread of ANS, guidelines and regulations need four elements:

- prevention guidelines for each type of pathway must be established so that people know what to do and how to do it;
- effective educational and outreach efforts must be used that tell those involved with various pathways what the guidelines and regulations are (according to surveys, signs at water accesses are one of the best ways to communicate to boaters);
- regulations of potential pathways must be established, especially high risk pathways; and

- penalties must be established and enforcement of the regulations used for those who need the "stick" approach rather than the "carrot."

Each of these four elements will have some beneficial effect independently, but the four combined are likely to be the most effective at protecting our waters for future generations.

Source: *ANS Digest*, Vol. 2, No. 2, 8/97

Noxious and Nuisance Plant Management Information System (PMIS)

A new CD-ROM is available from the U.S. Army Corps of Engineers, entitled: *Noxious and Nuisance Plant Management Information System (PMIS)*. The CD-ROM provides information on the identification and management of 34 species of noxious and nuisance vegetation. The CD-ROM operates with Windows 3.1 and Windows 95. For more information or to obtain a copy, contact: Michael J. Grodowitz, Waterways Experiment Station, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199, (601) 634-2972

Native Fishes Web Sites

The North American Native Fishes Association, at (612) 776-3468, reports a new Web Site at www.nanfa.org. Also Dr. Jay Hatch, University of MN, has created a new Web Site showing 30 color images of various native nongame species. In the works are natural history, species identification, and range maps for each species. The site address is www.gen.umn.edu/faculty_staff/hatch/fishes.

Meetings of Interest

November 2-3: Automated Sportsman's Data Systems Symposium, Indianapolis, IN. Contact: Ken Nettles, ASDS Coordinator (317) 933-3393; Hannah Kirchner, Symposium Coordinator, (504) 937-3737; or Bruce McCloskey, International Association of Fish and Wildlife Agencies

(202) 624-7890.

November 12-15 : 9th Annual International Conference of the Society for Ecological Restoration. Radisson Bahia Mar Beach Resort, Ft. Lauderdale, FL. Contact: Conference Headquarters (305) 247-1132.

November 16-19: International Conference on Advances in Groundwater Hydrology - a Decade of Progress. Tampa, FL. Contact: American Institute of Hydrology (612) 484-8169, FAX: 612-484-8357, E-Mail: AIHydro@aol.com.

Dec. 6-10: Symposium on the Effects of Riparian Land-Uses on Aquatic Ecosystems. Milwaukee, WI. Contact: John Lyons, WI Dept. of Natural Resources, 1350 Femrite Dr., Monona, WI 53716-3736, (608) 221-6328, FAX (608) 221-6353, lyonsj@dnr.state.wi.us.

December 7-10: 59th Midwest Fish & Wildlife Conference, Milwaukee, WI. Contact: Alan Crossley, WI Dept. of Natural Resources. (608) 275-3242.

February ?: Lower Mississippi River Conservation Committee 5th Annual Meeting. Memphis, TN. Contact: Ron Nassar, LMRCC Coordinator (601) 629-6602.

March 6-8: Freshwater Mussels Conservation, Captive Care, & Propagation, Columbus, OH. Contact: Doug Warmols, Columbus Zoo, 9990 Riverside Drive, P.O. Box 400, Columbus, OH 43065, (614) 645-3400, email: dwarmolt @postbox.acs.ohio-state.edu.

March 16-19: Eighth International Zebra Mussel and other Aquatic Nui

sance Species Conference, Sacramento, CA. Contact: Elizabeth Muckle-Jeffs, (800) 868-8776 email: profedge@renc.igs.net

March 20-24: 63rd North American Wildlife and Natural Resources Conference, Orlando, FL, Session: Nonindigenous Species: Methods of Introduction and Impacts. Contact: Richard E. McCabe, Wildlife Management Institute, (202) 371-1808

March 22-25: The Floodplain of the Future, 2nd Annual Conference on Natural Resources of the Missouri River Basin, Nebraska City, NE. Contact: Pam Haverland, USGS/BRD, Environmental & contaminants Research Center, 4200 New Haven Road, Columbia, MO 65201, (573) 876-1841, FAX (573) 876-1896, E-mail: pamela_haverland@nbs.gov.

May 3-6: Watershed Management: Moving from Theory to Implementation, Denver, CO. Water Environment Federation. (703) 684-2400.

June 23-28: First International Ictalurid Symposium - Catfish 2000 Davenport,

IA. Contact Steve Eder, Missouri Dept of Conservation, P.O Box 180, Jefferson City, MO 65109-0180, (573) 75-4115, FAX (573) 526-4047.



1st International Ictalurid Symposium

June 8-12: GCIP Mississippi River Hydrometeorology Conference "Predicting Climate Variability and its Implications for Water Resource Management: Regal Riverfront Hotel, St. Louis, MO. The conference will highlight scientific developments in the GEWEX (Globe Energy and Water Cycle Experiment) continental-scale International Project (GCIP). In addition it will address other climatological, hydrometeorological and environmental research issues in the Mississippi River Basin.

September ?: 88th Annual Meeting & the International Association of Fish and Wildlife Agencies. Contact: Georgia Department of Natural Resources.

Congressional Action Pertinent to the Mississippi River Basin

Fish and Wildlife

S. 361 (Jeffords, R/VT) amends the Endangered Species Act to prohibit the sale, import, and export of products labeled as containing endangered species.

S. 491 (Ford, R/KY) to amend the National Wildlife Refuge System Administration Act of 1966 to prohibit the Fish and Wildlife Service from acquiring land to establish a refuge of the National Wildlife Refuge System unless at least 50% of the land owners in the proposed refuge favor the acquisition.

S. 751 (Shelby, R/AL) to protect and enhance sportsmen's opportunities and conservation of wildlife.

H.R. 374 (Young, R/AK) amends the Sikes Act to enhance fish and wildlife conservation and natural resources management programs.

H.R.1718 (Cunningham, R/CA) to protect and enhance sportsmen's opportunities and enhance wildlife conservation.

Flood Insurance

H.R. 230 (McCollum, R/FL) to ensure that insurance against the risk of catastrophic natural disasters, such as hurricanes, earthquakes, floods, and volcanic eruptions, is available and affordable, and to provide for expanded hazard mitigation and relief.

Forests

S. 977 (Robert Torricelli, D/NJ) and John Kerry, D/MA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 to ban clearcutting and strengthen preservation on federal lands, and designate ancient forests, roadless and other areas where no logging may occur.

S. 1058 (Richard Durbin, D/IL) to amend the National Forest Management Act of 1976 to ban timber sales where the cost of making timber available for the sale is greater than the expected revenues from the sale in the Shawnee National Forest in IL.

H.R.101 (Baber, R/LA) amends the National Forest Foundation Act to extend and increase the matching funds authorization for the foundation, to provide additional administrative support to the foundation, to authorize the use of investment income, and to permit the foundation to license the use of trademarks, trade names, and other such devices to advertise that a person is an official sponsor or supporter of the Forest Service or the National Forest System

H.R.1376 (Eshoo, D/CA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 and related laws to strengthen the protection

of biodiversity and ban clearcutting on federal lands and to designate certain federal lands as Northwest Ancient Forests, roadless areas, and special areas, where logging and other intrusive activities are prohibited.

H.R.1861 (Hinchey, D/NY) amends the Forest and Rangeland Renewable Resources Planning Act of 1974, the Federal Land Policy and Management Act of 1976, the National Wildlife Refuge System Administration Act of 1966, the National Indian Forest Resources Management Act, and title 10 of the U.S. Code to strengthen the protection of native biodiversity and to place restraints upon clearcutting and certain other cutting practices on U.S. forests.

H.R. 2127 (Frank Riggs, (R/CA) to streamline Forest Service operation by contracting out some services connected with planning and implementing programs in national forests.

H.R.2458 (Helen Chenoweth, R/ID) to authorize the Agriculture and Interior secretaries to remove forest floor overgrowth and conduct other management practices where federal lands abut urban areas.

Grazing

H.R. 547 (Nadler, D/NY) requires the Interior and Agriculture secretaries to establish grazing fees at fair market value for use of public grazing lands.

H.R.2493 (Bob Smith, R/OR) the Forage Improvement Act of 1997, to make "moderate" changes to grazing regulations, such as setting a formula for fees at \$1.84 per adult head of cattle per month, up from the current amount of \$1.35. The bill also would guarantee lease renewal after 10 years if ranchers have followed all lease terms, and it would codify the structure and duties of Resource Advisory Councils, which give the federal government advice on managing federal lands.

Land Acquisition

H.R.1487 (Campbell, R/CA) to provide off-budget treatment for one-half of the receipts and disbursements of the Land and Water Conservation Fund,

and to provide that the amount appropriated from the fund for a fiscal year for federal purposes may not exceed the amount appropriated for that fiscal year for financial assistance to the states for state purposes.

H.R.1732 (Kildee, D/MI) to amend the Land and Water Conservation Fund Act of 1965 to provide for off budget treatment of the receipts and disbursements of the land and water conservation fund and the accounts established under that act.

Mining

S. 325, S. 326, and S. 327 (Bumpers, D/AR) to repeal the percentage depletion allowance for certain hardrock mines, provide for the reclamation of abandoned hard-rock mines, and ensure federal taxpayers receive a fair return for the extraction of locatable minerals on public domain lands, respectively.

Parks

S.991 (Frank Murkowski A/AK) to make technical-changes to Omnibus Parks and Public Lands Management Act of 1996.

H.R.104 (Bartlett, R/MD) authorizes the private ownership and use of National Park System lands.

H.R. 901 (Young, R/AK) to preserve the sovereignty of the U.S. over public lands by requiring that United Nations heritage designations be subject to congressional approval.

H.R. 2143 (Miller D/CA) to provide certain escrowed oil and gas revenues be available to improve national parks' visitors facilities.

Public Lands

S. 477 (Hatch, R-UT) amends the Antiquities Act to require an Act of Congress and the consultation with the governor and state legislature prior to establishment by the president of national monuments in excess of 5,000 acres.

S. 691 (Murkowski, R/AK), to require public review and the authorization of Congress for any presidential designations of national monuments, biosphere

reserves, and world heritage sites on public lands.

S. 749 (Dorgan, D/ND) to provide for more effective management of the National Grasslands.

S. 1118 (Frank Murkowski, A/AK) to set up a Community Recreation and Conservation Endowment of \$800 million for the state side portion of the Land and Water Conservation Fund from oil and gas revenues.

S. 1176 (Craig Thomas, R/WY) to elevate the role of local and state governments under the National Environmental Policy Act.

H.R. 919 (Miller, D/CA) establishes fair market value pricing of federal natural assets, and for other purposes.

H.R. 2223 (J.D. Hayworth (R/AZ) To amend the Recreation and Public Purposes Act to allow the conveyance of public land and forests to local education agencies for elementary, secondary and charter school use.

H.R. 2502 (John Duncan, R/TN and Bill Jenkins, R/TN) to amend the Land and Water Conservation Fund Act of 1965 to allow national park units that cannot charge entrance fees to retain other fees.

Refuges

H.R. 511 (Young, R/AK) to amend the National Wildlife Refuge System Administration Act of 1966 to improve the management of the refuge system.

H.R. 512 (Young, R/AK) to prohibit the expenditure of funds from the Land and Water Conservation Fund to create new National Wildlife Refuges without specific authorization from Congress. Passed by the House Resources Committee. Opposed by the President.

House Resources Committee approved on April 30, H.R.1420, the National Wildlife Refuge System Improvement Act of 1997 reforming the management of the National Wildlife Refuge System. Passed by the House, referred to the Senate. Passed by the Senate and referred back to the House with amendments.



Takings

S. 709 (Hager, R/NE) to protect private property rights guaranteed by the fifth amendment to the Constitution by requiring federal agencies to prepare **private property taking impact analyses** and by allowing expanded access to federal courts.

S. 781 (Hatch, R/UT) to establish a uniform and efficient federal process for **protecting property owners' rights** under the fifth amendment.

Water and Wetlands

H.R.128 (Crapo, R/ID) to preserve the authority of the states over waters within their boundaries, and to delegate the authority of the Congress to the states to regulate water.

H.R. 227 (McCollum, R/FL) directs the Secretary of the Army to conduct a study of mitigation banks.

H.R. 238 (Robert Manendez D/NJ) to amend the Oil Pollution Act of 1990 to make the act more effective in preventing oil pollution in the nation's waters through enhanced prevention of, and improved response to oil spills, and to ensure that citizens and communities injured by oil spills are promptly and fully compensated, and for other purposes.

H.R. 550 (Oberstar, D/MN), NonPoint Source Water Pollution Prevention Act of 1997 amends the Clean Water Act to establish requirements and provide assistance to prevent nonpoint sources of water pollution, and for other purposes.

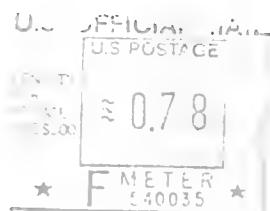
H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the Food Security Act of 1985 and the Clean Water Act to permit the unimpeded use of privately owned crop range and pasture land that have been used for the planting of crops or the grazing of corn in at least 5 of the preceding 10 years.

Sources: Land Letter, STATUS REPORT Vol.16, No. 2,5,8,11,13 17, 20, and 25; and NOAA Legislative Informer 3/97, Issue



River Crossings

Mississippi Interstate Cooperative Resource Association
P.O. Box 774
Bettendorf, IA 52722-0774



Address Correction Requested

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River Crossings

NATIONAL HISTORICAL SURVEY
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Volume 6

November/December 1997

Number 6

Increased International Protection for Sturgeon

Under an agreement reached in Harare (Zimbabwe) during the 10th Meeting (6/9-20/97) of the Conference of the Parties of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) all acipenseriform (sturgeon)



"shovelnose sturgeon"

species would be listed on the CITES Appendix II. That appendix controls trade in sturgeons and their products. The adopted resolution recommended the following:

- Parties should provide the CITES Secretariat with copies of applicable legislation on CITES;
- Range States should inform the Secretariat about legal exporters of sturgeon parts and derivatives;
- Importing countries should be particularly vigilant in controlling the uploading of sturgeon products;
- Parties should ensure that all relevant agencies within a Party cooperate on the necessary organization, scientific, and control mechanisms needed to implement the sturgeon listing, and any projects designed to conserve sturgeon species;
- Parties should consider the harmonization of their national legislation

related to personal exemptions for caviar (no more than 250 grams/person);

- Range States of sturgeon species included in Appendix II should consider the feasibility of developing annual export quotas of sturgeon products and communicate such quotas to the CITES Secretariat;
- Parties should monitor the storage, processing and reconditioning of sturgeon products in Customs free zones and free ports, and from airline and cruise line catering;
- The CITES Secretariat, in consultation with the *Animals Committee*, should explore the development of a uniform marking system for sturgeon products and aquaculture stocks to assist in subsequent identification of these species;

- Parties immediately endorse the consideration of the trade in sturgeon products by the *Animals Committee*.

Implementation of this resolution is expected to make importation of sturgeon caviar into the US (or anywhere else) much more difficult, restricted, and costly than at present. This is expected to increase the legal and illegal fishing pressure on American sturgeon and paddlefish species, as these species are already widely used as surrogates for the more popular European and Asian caviars. The resolution will become effective on April 1 1998.

Source: *The Sturgeon Quarterly*, Volume 5, No. 1/2, June, 1997

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Sturgeon Poaching in the Caspian Sea

The actions taken by CITES to protect sturgeon stems largely from illegal poaching in eastern Europe that has increased since the breakup of the Soviet Union. Prior to that time, little poaching occurred and sturgeon harvest was strictly controlled by government owned and operated fisheries.

Now, however, in the Russian part of the Caspian Sea (the Volga River Delta) the level of sturgeon poaching increases each year. Gangs of criminals and fugitives who make their living by illegal sturgeon poaching live on small islands in the Delta. In fact, over 1,100 fugitives were caught by the police in that area between 1994 and 1996, but many river guards are also corrupt and hamper police efforts by working with the poachers.

Sometimes river guards themselves prevent police from arresting poachers by threatening them with machine-guns. At the same time, mafia-type killings of honest policemen and river guards have become a common event in many places of the region, especially in Dagestan.

Gangs of racketeers also completely control the legal catch. During the spawning period, each evening a boat with racketeers approaches each legal fishermen team and takes 15-20 of the largest sturgeons caught during that day. This means that the official statistics of the sturgeon catch lack at least 1/3 of the fish captured. Even legally produced and sold caviar yields little profit to the fishermen and police. Almost all money remains outside the country on the accounts of private Russian companies which sell caviar on the international market.

In Dagestan (an autonomous republic on the eastern shore of the Caspian Sea on the border with Azerbaijan), there are at least 500 gangs located along 650 kms of the shore who specialize in illegal sturgeon catch. Harvest occurs mainly in the sea, and gangs are equipped with weapons as sophisticated as grenade throwers. Recently a military helicopter was

shot down by the poachers.

According the information of *TRAFFIC-Europe-Russia*, approximately 10 tons of frozen sturgeons illegally caught in Dagestan and Kalmykya (another autonomous republic located between Russia and Dagestan) are shipped to Moscow every day. There are between 30 and 50 illegal underground plants specializing in processing and smoking sturgeon meat in Moscow.

In Azerbaijan, poachers are also catching sturgeons in the sea, as far as 20-30 kms from the shore. Gangsters have good boats which are equipped with 5 motors each. Several nets are connected and put in the sea in the form of "a star". This method gives the highest catch of sturgeons.

Source: *The Sturgeon Quarterly*, June, 1997, Volume 5, No. ½

MICRA's Paddlefish/Sturgeon SubCommittee Recommends Basinwide Closure

MICRA's Paddlefish/Sturgeon SubCommittee met in St. Louis, MO on November 13-14, and after review of the current situation regarding CITES and the caviar market recommended that:

- commercial fishing for all sturgeon species be banned throughout the Mississippi River Basin; and
- a similar closure for paddlefish be discussed and considered by the states.

SubCommittee members from 16 states (KS,TN,IA,ND,SD,IN,OH,NE,IL,OK,AR,MS,LA,TX,KY, and MO); as well as U.S. Fish and Wildlife Service (FWS) representatives from the Washington Office and from Regions 1,2,3, and 6 were present at the meeting. A major consideration in making the recommendations were the international

River Crossings

Published by

Mississippi Interstate Cooperative Resource Association
(MICRA)
P.O. Box 774
Bettendorf, IA 52722-0774

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

actions taken earlier this year for sturgeon regarding their CITES Appendix II listing and the situation regarding sturgeon poaching in eastern Europe (see previous two articles).

The CITES action will almost certainly focus attention and demand on Mississippi River Basin sturgeon and paddlefish as replacements for Russian caviar. All agreed that the present condition of Mississippi River Basin sturgeon stocks -- 1) pallid sturgeon are federally endangered and 2) lake sturgeon are protected in several of the basin states -- cannot support the kind of fishing pressure that will almost certainly result.

MICRA Sub-committee members could not, however, reach a similar consensus on a Basinwide closure for paddlefish commercial fishing. This was largely because of the presence of what are currently considered to be viable paddlefish populations on the Ohio River (IN and KY). In the latter case, it was decided instead to elevate the issue to the full MICRA membership, asking that it be a subject of discussion at the Association's December meeting in Milwaukee. The results of those discussions will appear in the next issue of "River Crossings".

Biodiversity Issues

The need for preserving the Nation's biodiversity is at the very heart of such federal legislation the *Endangered Species Act*, currently up for reauthorization. Biodiversity gets at the issues of management, exploitation, speciation, evolution, and even religion:

- At what point should man prevent the continued loss of species?
- Are man's actions just another part of natural selection; if so, then should species be allowed to become extinct simply because they are not able to adapt to man's alteration of the landscape?
- Does man have a deeper philosophical responsibility to preserve species with which we share the earth?
- Does preservation of biodiversity hold the key to man's own survival in terms of the continued need to find new medicines and cures for constantly evolving parasites and diseases, such as AIDS and the Ebola virus?
- Should natural resource managers (i.e. fish and wildlife agencies and their constituents) bear the brunt of the expense for maintaining biodiversity, or should habitats bought and paid for with funds from hunters and fishers be simply managed for a few "desired" game species?
- At what point should society at large invest in natural resource management to preserve biodiversity beyond that which can incidentally be provided by game species management?

A team of noted scientists told members of Congress on 9/8 that society ought to "move quickly" to preserve biodiversity because human health is "directly dependent" on the health of other species. Scientists believe that only the "surface" of nature's "pharmacological bounty" has been scratched and that "extinctions are shredding pages in nature's library faster than they can be catalogued".

Eric Chivian, director of *Harvard University's Center for Health and the Global Environment*, said many medicines come from threatened species. In 1993, 57% of the 150 most-prescribed drugs in the US came directly from natural sources, according to Francesca Grifo, director of the *Center for Biodiversity and Conservation at the American Museum of Natu-*

ral History. Efforts are underway at the *National Cancer Institute* to test more than 100,000 natural compounds from 25 countries for their effectiveness in fighting cancer, AIDS and other diseases.

"Driven by concerns over rampant habitat destruction and species extinction," many scientists are calling for a comprehensive global biological survey that would count, name and describe species. Supporters of the idea assert that a global biological survey could help counter a general ignorance of species' role in providing food, medicine and "the environmental conditions that sustain all life." But skeptics like *University of Pennsylvania* biologist Daniel Janzen point out that an exact count of species is beside the point. Janzen said, "Whether it is 10 million or 30 million is [not] relevant to their conservation."

Taxonomists agree that the simple part of the global census -- identifying birds, mammals, reptiles, amphibians and flowering plants -- is done. Insects, mites, fungi, bacteria and other tiny creatures represent what *Harvard University* biologist Edward Wilson calls "the black hole of taxonomy": Largely unknown, the creatures' numbers could be 10 times more than the estimate of known species, which is 1.5 million.

Meanwhile, an environmental consultant has compiled "what appears to be the world's first comprehensive index of flora, fauna and microbes" on the World Wide Web. Richard Stafursky of Lewes, DE, who considers himself a "techno-Noah," began building the World Species List in 1994 to illustrate the inter-connectedness of species. Stafursky said he had approached government agencies with a proposal to create such a site, but "I didn't get an answer from them."

The cyber-database currently accounts for about three-fourths of the world's estimated 13.6 million species, he says. And the list is still growing: users from as far away as Costa Rica and Australia have sent additions to the 4,513-file index. The site's organization reflects Stafursky's goal of tying conservation to a "holistic vision" of all species. The site's Web address is <http://envirolink.org/species>.



Paddlefish taken in the sport fishery below Gavin's Point Dam, SD in 1995.

Russell Mittermeier, president of *Conservation International*, in a *Newsweek* opinion piece said, "...we languish in the Dark Ages when it comes to understanding the diversity of life on Earth." Mittermeier notes that the \$260 million spent on the latest Martian probe is "more than a full year of government spending on biodiversity research on our entire planet".

In the US and Canada the *World Wildlife Fund* (WWF) has identified 13 broad "ecoregions" that "hold as much biodiversity as the Everglades and are even more imperiled". The study suggests that North America is home to "a far more critical share of the world's biological diversity than has been generally recognized," with 32 regions harboring biodiversity that can be classified as "globally outstanding."

WWF's Eric Dinerstein said, "We always tend to equate biodiversity only with places like Brazil or Indonesia. But ... North Americans have won the biological lottery, but forgot to look at the ticket." However, the report also identifies several threatened regions, including the southeastern pine forest centered in north FL, the central tall grasslands around IA and four regions along the coast of southern CA. The study "appears to be the most extensive ever conducted for the region."

The WWF then announced on 10/30 that it will spend \$10 million to protect 5 of the most endangered ecoregions in North America:

- the Bering Sea (home to more than 525 marine species);
- the waterways of AL, GA and TN;
- the FL Everglades;
- the Klamath Siskiyou Forests in the Pacific Northwest; and
- the Chihuahuan Desert in the southwestern US and Mexico.

The campaign was born of the WWF's *North American Conservation Assessment*, a two-year study involving more than 70 scientists, which determined that 58 of the continent's 116 ecoregions suffer from "severe environmental degradation". The WWF plans to enlist the resources of nonprofit and business groups and governments in its campaign.

According to WWF Vice President Bill Eichbaum, the WWF plans to work on the 5 areas by analyzing the biological diversity and its threats; creating a conservation action plan incorporating economic, environmental and government interests; and composing a strategy to ensure the long-term protection of the biological diversity. "Our hope is by acting before there is a real crisis and by doing it at a larger scale," the ability to conduct long-term restoration is greater, he added. The entire program for the 5 areas is expected to take from 5-10 years.

While biodiversity may be important for the development of future medicines and for man's ultimate survival, it may have little to do with how ecosystems actually function. According to three independent studies recently published in the journal *Science*, the key to how



ecosystems function may not be the number of species (biodiversity), but which ones are included.

The three research groups, working respectively in (1) prairies in MN, (2) grasslands in CA, and (3) subarctic islands in Sweden; provided a variety of evidence suggesting that not all species are created equal when it comes to affecting how ecosystems function. Instead, the presence of certain key species or groups of species -- early or late season growers, for example -- can have great importance. Other

species or groups, it appears, can be lost or gained with relatively little effect.

Commenting on the work, Dr. Phil Grime, an ecologist at the *University of Sheffield* in England, said, "There are often just a few animals and a few plants that are really running the show, and what happens to them is really crucial." As a result, Grime suggested that ecologists should perhaps be less concerned than they have been with overall levels of biodiversity in habitats.

Others, like Dr. Peter Kareiva, an ecologist at the *University of Washington* in Seattle, however, said the new results suggested just the opposite. "The studies show that species richness does matter," Kareiva said. "It's like an insurance policy. The more species you have, the more likely you are to have the right ones. The more you eliminate, the more likely you are to have eliminated some particular function."

What the new research suggests is that in previous studies, increased productivity and increased retention of nutrients were not caused by higher species numbers per se. Instead, simply by virtue of containing more species, biodiverse ecosystems will, on average, always be more likely to include those crucial species or groups that would result in higher productivity or sustainability.

In simple ecosystems like farms or managed forests, those looking to increase productivity or improve drought resistance do not try to achieve their goals by increasing the overall numbers of species that they grow. Instead foresters and farmers simply plant key species that will do the job they want done.

In complex natural ecosystems, however, researchers say such straightforward identification of crucial species is impossible. In such ecosystems, which are bound to undergo unpredictable and uncontrollable changes in everything from climate to the invasion of new diseases over the long term, there are so many possible functions -- for example, the ability to recover from frost damage, ability to retain water, ability to process heavy metals -- that identifying all the important processes is

impossible. Therefore the preservation of biodiversity remains extremely important to the preservation of natural ecosystems.

Along those lines a broad coalition of outdoor enthusiasts continues to pursue a legislative initiative called *Teaming With Wildlife* to help address biodiversity issues. Under the proposed legislation (*Fish and Wildlife Conservation and Enhancement Act*) a user fee or excise tax is proposed (0.25 to 5%) on the retail price of outdoor recreation equipment to help natural resource agencies finance biodiversity preservation.



TEAMING WITH WILDLIFE *a natural investment*

While the *Teaming With Wildlife* initiative deserves everyone's support, it is really just a good start. As noted above, the issue of biodiversity preservation is a societal issue that goes far beyond the interests of outdoor recreation, and into the interest of man's own survival. Ask anyone with a terminal illness or debilitating disease what they wouldn't give to find a cure for that ailment or disease. Many of those cures likely lie in the diversity of species that only exist in our rainforests, in our native prairies, in our streams, and in our natural river ecosystems.

We need to be smart enough to preserve the treasure chest of information that the earth provides. In order to do that society, at large, must invest in the preservation of natural ecosystems -- recreationists cannot be expected to bear that burden alone!

Sources: National Journal's GREENWIRE *The Environmental News Daily*, 8/5, 8/15, 9/11, 9/16, 11/3/97; Laura Tangley, *US News & World Report*, 8/18-25; Jon Luoma, *New York Times*, 9-16-97; and *Land Letter*, 11/10/97

Religion and the Environment

In a pronouncement that church and political leaders called an "unprecedented religious defense of the environment," the spiritual leader of the Orthodox Christian Church on 11/7 declared the degradation of the environment a "sin."

As part of month-long visit to the US, Ecumenical Patriarch Bartholomew I addressed a symposium on religion, science and the environment in Santa Barbara, CA. Bartholomew said, "For humans to cause species to become extinct and to destroy the biological diversity of God's creation, ... to degrade the integrity of the Earth by causing changes in its climate, stripping the Earth of its natural forests, or destroying its wetlands, ... to contaminate the Earth's waters, its land, its air, and its life with poisonous substances -- these are sins."

Paul Gorman of multi-faith *National Religious Partnership for the Environment*, based in New York City, said Bartholomew's statement marked the "first time a significant religious leader has so explicitly designated crimes against creation a sin." Bartholomew's invocation of the word "sin," Gorman predicted, would elevate environmentalism to "a whole new level of theological inquiry."

Sierra Club Executive Director Carl Pope "said the environmental movement would no longer ignore the power of religion to make a difference." Interior Secretary Bruce Babbitt predicted that Bartholomew's statement will be viewed as "one of the great, seminal important religious statements of our time"

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 11/10/97 and Larry Stammer, *Los Angeles Times*, 11/9/97

East and West Coast Dam Removal

"For the first time in history," the Federal Energy Regulatory Commission (FERC) on 11/25 ordered the destruc-

tion of a hydroelectric dam "that its owner wanted to continue to operate". The decision to not reissue an operating license and order the removal of the Edwards Dam from Maine's Kennebec River was hailed by environmentalists "as a major triumph," but "brought warnings of peril" from the electricity industry.

In a 2-1 vote, FERC said its decision would restore salmon, shad and other fish species to at least 15 miles of the river. In a 7/97 recommendation, the agency's staff said that it would cost more to build fish passages than to remove the dam. But *Edwards Manufacturing Co.*, which co-owns the dam with the city of Augusta, said it plans to appeal the decision.

FERC Chair James Hoecker "emphasized that the decision ... need not be viewed with trepidation by the hydroelectric industry, which provides 14% of the nation's electricity, because Edwards is a special case involving a tiny amount of generation and a great deal of environmental damage." But the decision has been "anxiously awaited" because about 550 dams will come up for relicensing in the next 15 years.

In recent decades, research has shown that dams are the leading culprit in pushing many species of salmon and other sea-run fish toward extinction. Environmentalists are urging that 14 dams be destroyed nationwide. Among those possibly facing removal are:

- the Quaker Neck Dam in NC,
- the Elwha Dam on WA's Olympic peninsula, and
- four Snake River dams in WA state.

The decision comes "as deregulation of the electric utility industry and technological innovation has begun to punish some hydro dams with market reality". Industrialized nations are also looking to reduce their use of fossil fuels in energy production as attention focuses on the issue of global climate change.

James Evans of the DC-based *Edison Electric Institute*, noting that 95% of the nation's renewable energy comes from hydropower, called the decision "a dangerous precedent". But Margaret Bowman of *American Rivers* was among the enviros who praised the decision. Bowman said, "The US used

to be a leader in building dams. Now we're a world leader in looking at restoring rivers".

Earlier this summer, a series of editorials in the *Boise Idaho Statesman* "may have fundamentally altered the Pacific Northwest's ongoing debate over salmon" restoration. The *Idaho Statesman* "not previously known as a crusader on environmental causes" and "the largest and most influential newspaper in the state," recommended at least partial removal of the four federal dams on the lower Snake River to allow easier migration for chinook and sockeye salmon.

After conducting an economic analysis, the newspaper concluded that the dams "are a burden on ID and the Northwest." The first editorial in the series said, "The region won't be set free until the salmon and steelhead these dams kill are recovered and



balance is restored to our economy, environment and culture."

The newspaper concluded that tearing out the earthen sections of the Lower Granite, Little Goose, Ice Harbor and Lower Monumental dams would cost \$509 million a year in lost electrical power and "river-related income" to Lewiston, ID, and in added irrigation costs for WA farmers. But the newspaper calculated that the move would yield \$692 million in benefits from a restored fishery, not having to pay large mitigation costs, and savings in river barge transportation subsidies.

Early this fall, Slade Gorton (R/WA) said he would introduce legislation

and seek funding to remove a small dam in his state with the understanding that larger dams in the Northwest would remain intact. In a lengthy 9/15 floor statement, Gorton said he hoped to use removal of the lower Elwha River dam, near Olympic National Park, as a litmus test for other dam removal plans, one that will almost certainly show such proposals to be prohibitively expensive and of little benefit to endangered species.

Gorton said he will work to complete acquisition of the two Elwha dams with money from the *Land and Water Conservation Fund* (estimated at \$18 million) and will introduce legislation authorizing removal of the lower dam (which is low-balled at \$60 million). However, that bill will contain a provision mandating a study of the dam removal's impact on fish populations before breaching the upper dam can even be considered. Other provisions will ensure the viability of the Port Angeles water supply and bar removal of Columbia and Snake dams without congressional authorization.

Gorton also said his action would remove the "wild card" of potentially reckless administration action on the issue, citing President Clinton's designation of UT's 1.7 million-acre Grand Staircase-Escalante National Monument as an example. "My decision has been driven by the unilateral activism this administration has demonstrated when it comes to complex environmental issues," he said.

But the outcome of an Elwha dam removal already appears will have no influence on bigger Northwest dam decisions, at least as far as Gorton is concerned. "Some groups and elected officials support removal of the Elwha River dams as a first step, a practice run, toward removing Columbia River system hydroelectric dams. Those who want to make a habit of dam removal should understand this proposition: I will never support their proposals to remove Snake or Columbia River dams-never." He added: "We can do more for salmon especially by acting in a more intelligent and coordinated way to restore our Northwest salmon resources. But the costs associated with removing dams on the Snake or Columbia rivers will always dwarf the potential benefit for salmon."

One week after Gorton's announcement, House Resources Committee members savaged the *Sierra Club* for its proposal to drain Lake Powell, the second largest reservoir in the US. The environmental group's board of directors voted last November to support breaching the massive Glen Canyon Dam and draining the lake behind it to restore natural flows to the Colorado River and to re-expose Glen Canyon. The aesthetics of the canyon outweigh the boating, water-supply and power-production capacities of the lake and dam, the loss of which can be compensated by Lake Mead and Hoover Dam further downstream, the group has argued.

But that view hardly washed with National Parks and Public Lands Subcommittee Chairman James Hansen (R/UT), who called the proposal "bizarre" and slated the hearing largely to blow it out of the water for the benefit of the media, he said. Still, Hansen cautioned Rep. Christopher Cannon (A/UT) to show respect for *Sierra Club* President Adam Werbach and the other witnesses when Cannon harshly criticized the proposal. The panel carted out witness after witness to discredit the *Sierra Club* plan, including the top officers of the Bureau of Reclamation (BOR), Western Area Power Administration, UT Department of Natural Resources, AZ Department of Water Resources, the Navajo nation, and a Los Angeles social services group.

Afterwards, Hansen summarized, "It was important to hold this hearing so that the American people can understand just how extreme this proposal is and how it would impact millions of people due to water shortages, higher electricity prices, lost recreation opportunities and severe environmental problems."

Even so, former BOR Commissioner Dan Beard in a 10/6 *New York Times* editorial suggested Hansen and colleagues may have miscalculated. Although the proposal to dismantle the Glen Canyon dam and drain Lake Powell on the UT-AZ border is "breath-taking" in scope, "we shouldn't dismiss the idea". Beard says the House Resources Committee hearing was intended to "embarrass" those who support the idea, but instead "gave legitimacy

to the option" because they "tacitly admitted" that dams are a political choice and "are not permanent fixtures on the landscape." Beard asserts that the impacts of draining Lake Powell would be acceptable because recreationists have alternatives and the loss of hydropower would be "minimal." Beard, now a senior vice president at the *National Audubon Society* said, "Draining a reservoir and restoring a canyon may just be the cheapest and easiest solution to our river restoration problems".

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 10/6, 10/14, and 11/26/97, Tim Breen, *Land Letter*, 10/10/97, and Tom Kenworthy, *Washington Post*, 10/14

Middle Mississippi River Chute Restoration

The U.S. Army, Corps of Engineers, St. Louis District's (SLD), Avoid and Minimize Team has initiated on-going restorations of Sante Fe and Marquette chutes on the Middle Mississippi River. Sante Fe Chute is located at Mississippi River miles 35 through 40, while Marquette Chute is located between Mississippi River miles 50.1 and 48.0.

The Sante Fe Chute project began in 1996 using the new micro modeling tool at the SLD Applied River Engineering Center (AREC). During two meetings, biologists and engineers collaborated on developing cost effective and environmentally sound alternatives. It was determined through model study test results, that the alternative with the greatest potential for aquatic diversity involved the construction of nine perpendicular alternating dikes (similar to that shown in the figure to the right).

As river engineers within the potamology section developed plans and specs from the micro model study, they determined that there was a need for bank protection works along the side channel due to the new sinuous flow pattern created by the dike field. A decreased budget dictated that placement of only six of the nine dikes and the bank protec-

tion works could be pursued. Also, rather than building the dikes "level crested" to a "top of bank" height, they were designed with a sloped height that tied into the bank line at the "top of bank" and sloped toward the center of the channel to + 15 LWWRP with a 250-foot effective length. *Luhr Brothers*, the construction contractor for the project, completed the dike and revetment works in April 1997.

On 5/28, a multi-sweep, high resolution hydrographic survey revealed similar bathymetry to that displayed in the micro model. This included 20-foot scour holes at the two upper dikes and minimal scour at the other four dikes. Monitoring will be conducted after the next high water event to determine whether additional dike height, as called for in the model study, is required. Infrared photography was collected in July and is currently being analyzed for flow pattern comparisons.

At the Marquette Chute the project purpose was to: (1) increase the aquatic diversity in the side channel, and to connect a scour hole at the lower end of the island to the main channel. In order to achieve the first

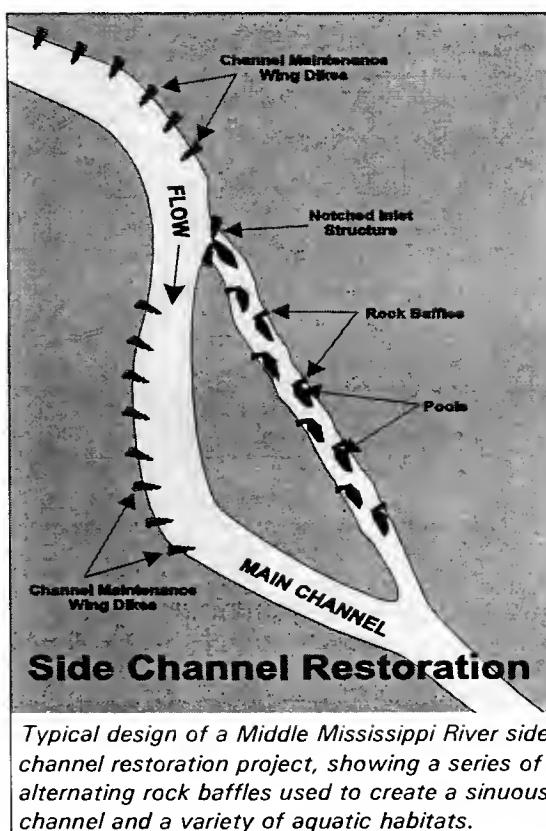
project objective, the side channel depth needed to be increased.

Several meetings were held at the AREC during project planning stages between representatives of the SLD, MO Dept. of Conservation, IL Dept. of Conservation, and U. S. Fish and Wildlife Service. At each of these meetings, representatives were allowed to perform their own tests on the model and offer new alternatives to the modelers.

The model demonstrated that aquatic diversity could be achieved by adding two notches to the existing upper closing structure. It also showed that two dikes in the lower section of the chute would help develop conductivity to the main channel. Both recommendations will be implemented with one alteration -- that only one notch will be added to the closure structure this year with the possibility of the second being added next year. A detailed report of the model study is forthcoming.

Rob Davinroy and the entire SLD AREC staff should be applauded by river biologists, ecologists, and hydrologists alike. They have made major strides in our collective ability to restore habitat diversity to the Middle Mississippi River, and many of their techniques should be applicable to restoration of large channelized rivers elsewhere. The techniques being used on these two side channels are similar to those used (on a smaller scale) as standard operating procedures for trout stream habitat management. This moves us into a whole new realm of opportunities to better manage large rivers -- addressing both game and endangered species issues -- while restoring some semblance of a river's natural dynamics.

Also of interest to river managers is the AREC library. It consists over 2,500 journal articles, technical reports, theses, and textbooks by 4,500 authors on river engineering and micro modeling related topics. Currently, static HTML pages containing contents of the library can be found at <http://www.mvs.usace.army.mil/river/library.htm> and dynamic pages that can be queried are under construction. This card catalog can be searched by either author or title/ subject.



Typical design of a Middle Mississippi River side channel restoration project, showing a series of alternating rock baffles used to create a sinuous channel and a variety of aquatic habitats.

The newest addition to the library's collection includes databases of both current maps published by USACE and historical maps of the district. Web pages for these databases are pending. Included are St. Louis District navigation maps of the Mississippi and Kankakee rivers and major lakes within the St. Louis District (Rend, Wappapello, Carlyle, Shelbyville, Mark Twain). The historical collection includes the same navigation maps from the 1850s to the 1940s as well as land surveys of the district from the mid 1800's up to 1890, USGS quadrangle sheets from the 1930s, and early 1900s aerial mosaics of the Mississippi and Missouri rivers.

Researchers can search the AREC card catalog on site or contact it at the AREC web site. Queries can also be requested by contacting Karen Rieken by email at rieken@smtp.mvs.usace.army.mil or calling (314) 263-4230.

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Missouri and Middle Mississippi River Initiative

Senator Christopher Bond (R/MO) announced his Missouri and Middle Mississippi River Initiative on 10/31. Bond's initiative seeks to enhance, preserve and protect habitat for fish and wildlife on the Missouri and Middle Mississippi rivers. The new 5-year \$50 million authorization is a win-win approach that will implement and expand the use of new and innovative measures designed by the Corps of Engineers (COE) to improve habitat conservation without impacting adversely other water related needs, including navigation, flood control, and water supply.

With only scarce dollars and without specific authorization, the St. Louis

District (SLD), Corps of Engineers has been developing ways in which new and existing navigation structures used to guide the river and maintain the channel may be modified to meet environmental as well as navigation goals (See previous article). These innovations have proven successful, earning wide acclaim including a *Presidential Design Award* and *Federal Design Achievement Award*. This legislation seeks to put these successful innovations to work on the Missouri River and expand their employment on the Middle Mississippi by providing a specific authorization and a dedicated source of funds.

This Initiative works "between the banks" whereas complimentary programs such as the *Environmental Management Program* on the Upper Mississippi and the *Missouri River Mitigation Project* have only worked to improve habitat on lands "adjacent to the rivers".

The draft legislation authorizes \$10 million/year over 5 years to develop and implement a plan, including the following activities:

- modification and improvement of navigation training structures to protect and enhance fish and wildlife habitat;
- creation of side channels to protect and enhance fish and wildlife habitat;
- restoration and creation of island fish and wildlife habitat;
- creation of riverine fish and wildlife habitat;
- establishment of criteria to prioritize based on cost-effectiveness and likelihood of success; and
- physical and biological monitoring for evaluating the success of the project.

The draft legislation forbids expressly activities that adversely affect private property rights and water-related activities including flood control, navigation, and water supply. The draft provides that the project be coordinated with other related Federal and State activities and that there be public participation in the development and implementation of the projects. It requires a 25% non-federal cost share and limits the federal cost of any single project to \$5 million. Finally, the draft legislation confers no new regulatory authority and requires compliance with the *National Environmental Policy Act*.



Missouri River near Rulo, NE showing progressive habitat loss caused by development of the federal nine-foot navigation and bank stabilization project.

It is the intention to include this legislation in an omnibus *Water Resources Development Act* the Senate expects to consider in 1998. As of 10/31, supporters of this proposal include the *Missouri Farm Bureau*, *American Rivers*, *MARC2000*, *Missouri Soybean Association*, and *Missouri Corn Growers Association*.

Senator Bond should be applauded for his support of the work that Rob Davinroy and the SLD have been doing on the Middle Mississippi (see previous

article) and expanding it to the Missouri River. Unfortunately however, the requirement for a 25% nonfederal cost share for project implementation will significantly limit the success of this legislation.

The *Federal Navigation and Bank Stabilization (channelization) projects* on both the Middle Mississippi and Missouri rivers are the primary causes for loss of the riverine habitats proposed for restoration under this legislation (see the four historical, 1934-77, Missouri River photographs displayed on the previous page). Restoration of those habitats is critical to the recovery of the Missouri River ecosystem and its threatened and endangered species. Recently developed technologies allow us to now restore those habitats while still maintaining the other federal project purposes, and that restoration should be done at 100 % federal cost.

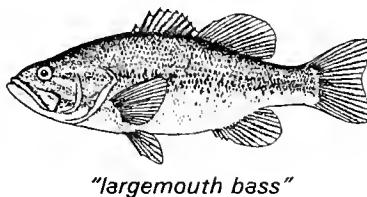
The legislation should therefore be amended to eliminate the 25% nonfederal cost share, and create a special budget item in the COE operation and maintenance budgets for this activity. As noted above, a primary beneficiary of such action would be the federally threatened and endangered species of the Missouri and Mississippi rivers.

UMR Catch and Release

Fishery biologists used to think that recreational fishing pressure had little or no effect on river fish populations. Since then, studies on the Upper Mississippi River (UMR) have shown that some fish species, bass in particular, have strong affinities for particular backwater locations. Mark and recapture studies have shown that it is possible to significantly reduce the number of large adult bass in specific backwaters by fishing.

In 1990 the UMR Pool 13 Brown's Lake area (Jackson County, IA) was enhanced by means of a habitat restoration project. Construction of a water control structure and dredging to increase the flow of oxygenated water, plus a deflection levee to keep out suspended sediment created a Mecca for largemouth bass. It is estimated that angler effort and catch

in Brown's Lake increased by a factor of 10 since project completion. Much of the increased fishing pressure and harvest is suspected to come from the increased number of bass fishing tournaments held in Pool 13. Many of the bass weigh-ins are also held on the IL side of the river which makes the IA Dept. of Natural Resources (DNR) powerless to enforce release site restrictions that might help protect the fishery.



All of these factors have caused the IADNR to consider making Brown's Lake a "*catch and release only*" fishery for all black bass. Upon DNR recommendation, The *IA Natural Resource Board* has issued a *Notice of Intended Action* to amend its fishing regulations to designate Brown's Lake as possibly the first catch and release area for black bass on the UMR. DNR biologists would evaluate the effects of the regulation change through a 5 year monitoring study.

Source: *UMRCC Newsletter*, July/August 1997

River Delta Restoration and Hypoxia

"In the name of economics and the environment," scientists and engineers from several European countries have punched holes in half a dozen dikes and dams, letting the Danube River reclaim more than 9,000 acres of its previously drained delta. A breeding, resting or feeding ground for nearly 325 species, the Danube River delta is Europe's "largest wetland west of the Volga" River.

During the mid-1980s, Romanian dictator Nicolae Ceansescu ordered that large slices of the river delta be turned into grain fields, prompting the building of dikes and the draining of more than 240,000 acres. Now the *Danube Delta Biosphere Reserve*, an agency

created by the Romanian government in 1991, is overseeing a project aimed at reversing "one of the biggest and fastest land grabs in recent history." The effort is funded by the World Bank's *Global Environment Facility* and other foreign donors.

Meanwhile, despite an agreement among nearly 20 European countries to help clean the Danube and other European rivers, the delta continues to suffer from algae blooms sparked by an overload of untreated sewage and farm and industrial runoff from the 8 countries in the watershed.

Similar to the Danube, the Mississippi River Delta's historical network of distributary streams has long been isolated by the levees which maintain the River's commercial shipping lanes. Under the present scenario, sediments and nutrients carried by the River from the entire Basin are transported right past the historical delta, and are injected "hypodermic needle like" into the Gulf of Mexico.

This could be one of the major causes of Gulf hypoxia in that the coastal marshes are no longer allowed to stabilize any of the Basin's runoff materials before they reach the Gulf. Historically, the river flowed through an intricate network of distributary streams and marshes in the delta on its way to the Gulf. During this process, the waters slowed and the coastal marshes stabilized wastes and were themselves stabilized against the Gulf's erosive forces, by the never ending supply of sediments being carried to them from the watershed.

Today we have lost on both accounts. The coastal marshes (1) aren't being allowed to stabilize the River's wastes before they reach the Gulf, and (2) themselves aren't being enriched by the River's sediments.

One solution might be to breach the shipping canal levees in a number of places in order to divert some of the runoff into the coastal marshes. This would not only prevent some of the "hypoxia causing" nutrients from reaching the Gulf, but would also replenish some of the nutrients and sediments of the Gulf coastal marshes that are otherwise being eroded away by Gulf currents.

If the farmers of the upper Midwest are expected to do their part to address the hypoxia issue by reducing nutrient runoff from their crop fields, then the coastal states must do their part as well, by letting some of the River's distributaries and coastal marshes act as the "kidneys of the watershed" as they did historically.

Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 10/20/97 and Marlise Simons, *New York Times*

Pfiesteria Update

In early October, at least 15 more people in MD and VA reported ailments that were linked to exposure to the toxic microbe *Pfiesteria piscicida*. MD officials found short-term memory loss -- "the apparent neurological trademark of *Pfiesteria*" -- in seven state Dept. of Natural Resources employees exposed to the Chicamacomico River. The employees were conducting research on fish kills in the river on 9/13, one day before it was closed. But "the most worrisome aspect of the new findings were that two patients were from Wicomico Creek and the Nanticoke River," where the toxic microbe had not previously been reported.

University of RI researcher Percy Donaghay on 9/26 said the decline of the Chesapeake Bay's oyster population may have removed one of the bay's natural mechanisms for removing microbes such as *Pfiesteria* from the water. The bay's oyster population has dropped by 99% over the last century.

The Washington Post reported on 10/3 that counties on MD's Eastern Shore "are awash in pollutants linked to *Pfiesteria*." "Top" poultry counties produce "enough manure to meet the needs of every crop," yet they (the farmers) also import fertilizers "by the thousands of tons". Amid recent attacks on MD's efforts to reduce agriculture pollution, Tom Simpson of the MD Dept. of Agriculture points out that although the state is 35th in the US in farm acreage, it leads the nation in acres farmed under nutrient-management plans.

"North Carolina is undergoing some anguished second-guessing" about the way it handled outbreaks of *Pfiesteria* since 1991 as the toxic microbe killed hundreds of millions of fish and may have sickened a number of people in that state. The state's "long-standing" position -- that residents had nothing to fear -- "has collapsed" as mounting evidence illuminates the hazards of *Pfiesteria*. At the same time, policymakers and environmentalists have "contrasted unfavorably" NC's "passive" response to MD's more "aggressive" reaction.

As a result, on 10/9 NC officials began posting signs at waterways where *Pfiesteria*-related fish kills have occurred, including parts of the Neuse and New rivers and Pamlico Sound. Also NC officials have begun a new study on *Pfiesteria*'s health risks, and have requested federal funds to build a center to study the microbe. "Some experts say NC's missteps offer lessons" to officials about the importance of heeding warnings "even when scientific proof is lacking".

Meanwhile FL has convened a task force to study the microbe, which has been found in the St. Johns River near Jacksonville.

The *Charleston [WV] Gazette* ran a four-part series in early October on the impact of pollution from WV poultry farms on the Potomac River. Some 17.5 million chickens live in the Potomac Valley region, more than 240 times the five-county area's human population. The newspaper links growth in the poultry industry to recent federal studies indicating the river contains unsafe levels of fecal coliform bacteria. The WV Division of Environmental Protection (DEP) will publish another study on fecal contamination later this year. The DEP does not regulate the poultry industry and relies upon voluntary efforts by farmers to limit water pollution. Three-quarters of the 350 poultry farmers in the Potomac Valley do not take recommended precautionary steps, according to the Agriculture Dept.

Meanwhile, VP Al Gore and MD officials announced a \$200 million program on 10/20 to pay farmers to idle land and create buffers to control runoff from farmland. The program

"could lead to buffers replacing plowed fields along practically all the waterways that flow through farms into the delicate Chesapeake Bay estuary" in the first instance of a state linking its wetlands conservation program with the Agriculture Dept.'s Conservation Reserve Program. The agreement committed \$170 million in federal funds, \$25 million in state funds, and another \$5 million from *The Chesapeake Bay Foundation*.

Former MD Gov. Harry Hughes (D), chair of a commission studying recent outbreaks of *Pfiesteria*, said the new program might help forestall "more drastic regulation" of farm runoff. But farmers expressed only "cautious support" for the program, which aims to take 100,000 acres out of production. Environmental groups, including the *American Farmland Trust*, *Environmental Defense Fund* and *National Audubon Society*, praised the project.

Additionally, the MD panel studying *Pfiesteria* recommended on 10/31 that all state farmers have nutrient-management plans in place by 2002 to curb agricultural runoff. The panel's report suggests disposal alternatives for chicken manure used as fertilizer, such as burning and composting. The report also urges the state to improve water quality by upgrading septic systems and limiting residential fertilizer use. The MD legislature in 1/98 will review the panel's recommendations, which were presented to Gov. Parris Glendening (D).

Meanwhile, mid-Atlantic poultry producers have disputed claims that chicken waste has caused the *Pfiesteria* outbreaks. University of MD biologist Rita Colwell confirmed that scientists have not yet determined what triggered the outbreaks. But MD Natural Resources Secretary John Griffin "said government officials often have to act in the face of uncertainty". At the same time, the producers called on the state to work with them to find uses for chicken waste other than fertilizer.

A congressional subcommittee studying *Pfiesteria* were told by scientists on 10/9 that the recent outbreaks should be studied within the broader national context of other algal blooms, such as red tides. Congress has set aside \$11 million for *Pfiesteria* research, which

the *Centers for Disease Control* announced on 10/9 it will join.

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 9/29, 10/3, 10/10, 10/16, 10/21, 10/17, and 11/3/97

Agricultural Wastes

Sen. Tom Harkin (D/IA) on 10/28 introduced a bill that would increase the number of restrictions on large animal farms. On 10/29 Harkin called on the Agriculture Dept. and the USEPA to brainstorm solutions to pollution problems caused by animal wastes.

Noting that animals produce 200 times more waste in the US than humans, Harkin said that "failure to manage animal waste adequately is taking a toll" on the environment and human health. According to USDA estimates released on 10/29, cattle in the US produce more than 90 million tons of waste/yr, pigs produce more than 8 million tons/yr, and chickens produce more than 7 million tons/yr.

Earlier in October the USEPA proposed more frequent inspections and stepped-up enforcement efforts for corporate hog and poultry farms under a new policy to "plug holes in the *Clean Water Act*." EPA's Robert Perciasepe said under the new "holistic approach," regulators would also focus on fertilizer use, urban runoff and sewage-treatment operations that contribute excess nutrients to US waterways. EPA's new policy was to be made available for public comment in late October.

The drive to curb nutrient runoff "has taken on new urgency" since the

Pfiesteria outbreaks in the Mid-Atlantic, which killed more than 1 billion fish and forced the closure of several Chesapeake Bay tributaries (See the October/November issue of *River Crossings* and the preceding article).

Meanwhile, officials from nine "major" poultry producers told the USEPA on 10/28 that they will launch industry initiatives to curb the amount of chicken waste polluting the nation's waterways. Invited to a meeting at the EPA's Region III headquarters in Philadelphia, the executives reportedly told officials that they will reduce water pollution nationwide without being prodded by new regulations. The companies represented were *Empire Kosher Poultry*, *Perdue Farms*, *Tyson Foods*, *Townsend's*, *Pennfield*, *Farmers Pride*, *Wampler*, *Mountaire Farms* and *Rocco*.

EPA Regional Administrator Michael McCabe said the companies revealed few specifics about their plans, but sounded "quite innovative." Among the ideas discussed were linking farmers' production contracts to the use of "best management practices" and altering poultry feed to reduce the amount of phosphorus in waste. Environmentalists say farmers should also limit the amount of chicken waste they use as fertilizer and store manure in sheds for future use. McCabe said, "I definitely felt the industry understands this is an issue they need to address, and that their failure to address it could result in regulatory actions ... that they may find difficult to live with." Without strong industry action, government action would be necessary, he said.

Meanwhile, in IA the USEPA fined Des Moines-based *DeCoster Farms* \$10,000 for spreading manure on a

field which drains into an agricultural well and aquifer, even though the incident did not pollute drinking water. The EPA's Kurt Hildebrandt said the action was the first federal pollution fine against an IA livestock operation.

Regarding the public's views on the issue, the Annapolis-based *Chesapeake Bay Foundation* on 10/28 released a survey of 616 MD and VA residents which revealed that 80% would be willing to pay 10 cents more per pound of chicken if the money was applied to reducing bay pollution. The poll was done by *Widener-Burrows & Associates* in Annapolis and had a margin of error of 5%.

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 10/6, 10/9, 10/29, 10/31/97; Curt Anderson, AP/San Francisco Chronicle/Examiner online, 10/28; Washington Times, 10/30; AP/Omaha World-Herald, 10/5; and Bill Lambrecht, St. Louis Post Dispatch, 10/12

Buffer Strip Research

The use of vegetated buffer strips along stream corridors has grown greatly over the past several years, but there has been much discussion about their relative effectiveness. The Interstate Commission on the Potomac River Basin (ICPRB) responded to this issue through a recent staff study which catalogued available information on plant uptake rates of nitrogen and phosphorus. The idea was to develop a guide for the efficient design of stream-side buffer strips.

The project was largely supported by a grant from the VA Department of Environmental Quality under Section 604 (b) of the *Clean Water Act*. In addition to ICPRB staff, Karl Williard of the *Environmental Resources Research Institute* of the PA State University made a significant contribution to the work.

The project report reviews, synthesizes, and presents the available information on nitrogen and phosphorus, addressing the disciplines of forestry, agriculture, and horticulture. This information will help alleviate the problem of nitrogen and phosphorus uptake information not being readily available



to those individuals responsible for designing functional buffer zones. This appears to be the first attempt of this kind.

The main purpose of vegetative buffer strips is to reduce the nutrient load entering streams and rivers by trapping nutrients bound to the sediments in overland flow. These trapped nutrients become sequestered in the buffer zone and are available for root uptake along with the nutrients in solution in the overland and subsurface flow.



Each plant species has different nutrient requirements and therefore has its own distinct nutrient uptake rate. The extensive ICPRB literature search includes direct nutrient uptake and/or related information on optimal fertilizer requirements for many plants. The most useful results are summarized, ranked, and presented as tables in the report. The individual findings from the referenced literature are also presented. Tables are presented for each of the categories of plants that are appropriate for the typical three-zone design of buffer strips. The managed planting of specific plant species can create a more effective buffer zone than one in which random species populate by chance.

A secondary goal of the study was to try to identify some plant species that should be included in buffer zones because of their relatively high uptake rates of nitrogen and phosphorus. It is hoped that the project will provide useful information to the many groups working to protect streams and rivers using buffers to

improve water quality.

Contact: Roland Steiner, ICPRB, Suite 300, 6110 Executive Blvd., Rockville, MD 20852, (301) 984-1908

Miscellaneous River Issues

AL Fish Kills - An early October warehouse fire in Birmingham, AL that released pesticides into waterways has caused massive fish kills and human health problems. An estimated 4,700 gallons of "super-concentrated" Dursban were released into stormwater drains during the 10/2 fire. Emergency response crews built a dam of hay bales and bags of charcoal "as a last line of defense" before tainted water could leave Bayview Lake and enter the Black Warrior River, which is the local drinking-water source. The AL Dept. of Environmental Management on 10/16 said that unsafe levels of Dursban were found in Bayview Lake. Meanwhile, at least 15 firefighters complained of health problems such as nausea, diarrhea and vomiting following exposure to the pesticide. Source: Gita Smith, *Atlanta Constitution*, 10/17/97.

Experimental Pellets - Toledo authorities have endorsed a scheme to use experimental pellets to cover Ottawa River sediment that the USEPA says may be the largest source of PCB pollution in Lake Erie. Early next year, engineers plan to scatter tons of *AquaBlok* bentonite clay-coated pellets over the riverbed. The pellets are designed to fall to the bottom, absorb water, and expand into a "heavy, claylike goo" that creates a "virtually impermeable layer" over the sediment. *AquaBlok*'s manufacturer, *New Waste Concepts Inc.*, has tested the product once before, successfully capping the floor of a marshy military area in AK. Officials are unwilling to dredge the Toledo site, which has PCB levels millions of times higher than EPA standards, for fear of churning even more chemicals into the water. The OH Dept. of Development will help fund the \$230,000 *AquaBlok* experiment. Source: Jim Nichols, *Cleveland Plain Dealer*, 11/3/97.

Grand Canyon Flood - For the second time, federal officials on 11/3 began artificially flooding the Colorado River

in the Grand Canyon to restore eroded camping beaches, enhance fish habitat and make room in Lake Powell for the expected winter runoff from the Rocky Mountains. The two-day flood, proposed earlier this year by *American Rivers*, called for releasing 31,000 cfs through the Glen Canyon Dam. The first such flood, which lasted seven days in March 1996, released 45,000 cfs through the dam and deposited up to 12 ft. of sand on Grand Canyon beaches. This year's flood is intended to restore beaches in Marble Canyon, the upper part of the Grand Canyon. Source: Steve Yozwiak, *Arizona Republic*, 11/3/97.

IL Livestock Regs - The IL legislature in early November passed a measure to tighten the regulation of large-scale livestock operations by authorizing the state Dept. of Agriculture to conduct annual inspections of manure lagoons. Some central IL lawmakers had pushed for a more comprehensive bill, which would have authorized the ILEPA, not the state Agriculture Dept., to monitor the farms. But Rep. Duane Noland (R) said that expanding the role of the ILEPA "doesn't satisfy those who want more restrictions, and it just further irritates those who are in the industry." The bill awaits Gov. Jim Edgar's (R) signature. Source: Adriana Colindres, *Springfield [IL] State Journal-Register*, 11/15/97

MN Fish Eradication Banned - Anoka County, MN, District Judge Ellen Maas on 10/30 blocked the MN Dept. of Natural Resources from poisoning carp and other fish in Howard and Mud lakes. Howard Lake resident Patricia Yaritz on 10/24 filed the lawsuit, contending that the DNR failed to assess the project's effects on other natural resources. Source: Dean Rebuffoni, *Minneapolis Star Tribune*, 11/1/97

MO Chickens - "A new battle [is] brewing" in MO over the poultry waste that is spoiling streams while producers are governed by regulations with "holes big enough to drive manure trucks through." The Ozarks of southwestern MO have seen a three-fold increase in poultry farming over the last 6 years. Last year, 250 million chickens and 22 million turkeys produced more than a million tons of manure. But MO environmental regulations do not address phosphorus, a key compo-

ment of poultry manure that can choke aquatic life. Nor does the state regulate the contractors who haul away manure or the spreading of manure by farmers with less than 100,000 birds. David Shorr, director of the state Dept. of Natural Resources said, "It has grown so quickly down there that it may have outstripped our regulatory regimen." At the urging of the USEPA in October, MO officials began a "poultry dialogue" that could bring about a plan to manage poultry waste. Meanwhile, citizen patrols are watching farms and reporting possible unsound waste-management practices to the DNR. Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 11/26/97 and Bill Lambrecht, *St. Louis Post-Dispatch*, 11/23/97

MT Mine - Hoping to prevent *Stillwater Mining Co.* from building an impoundment to store wastes, landowners along the Stillwater River near Nye, MT, have petitioned Stillwater County commissioners to create a zoning district that would exclude industrial uses. But Chris Allen of *Stillwater Mining* said the site is ideal for storage because it is away from the river, the groundwater is deep, and the soils have poor permeability. Source: Clair Johnson, *Billings Gazette*, 11/2/97.

NC Sewage Penalties - "Speaking in unusually blunt terms," NC Gov. Jim Hunt (D) on 10/20 warned that the state intends to impose stiffer penalties on municipal wastewater-treatment plants that pollute waterways. His remarks came as state regulators begin to implement the stricter discharge limits adopted by state lawmakers last summer following a spate of "highly publicized" waste spills. Hunt, speaking at the *NC League of Municipalities* annual meeting in Raleigh said, "I don't want there to be any misunderstanding on how the governor stands on this. ... We're going to get tougher and tougher". Source: John Wagner, *Raleigh News & Observer*, 10/21/97

NE Streams - The city of Lincoln has petitioned the Dept. of Environmental Quality to create a "special fifth category" for NE streams to recognize that some waterways are not

"high-quality habitat deserving of stringent pollution regulations." Environmentalists contend city officials are trying to avoid spending \$35 million to upgrade two wastewater-treatment plants that discharge into Salt Creek. The EPA has opposed changing the creek's designation. Source: Julie Anderson, *Omaha World-Herald*, 11/14/97.

NE Water Permits - "Hundreds" of state air and water quality permit applications are "stacked up" at the NE Dept. of Environmental Quality, raising questions of whether pollution may be increasing as permit review stalls. As of October, the DEQ had an estimated 600 permit applications pending, including an "unprecedented" number of applications to build or expand hog-confinement facilities. DEQ Director Randy Wood acknowledged that the backlog may mean more pollutants are being discharged than would be allowed under updated permit standards. The department plans to hire 12 new employees to review the applications. Meanwhile, the USEPA has been helping with wastewater discharge inspections in NE to give state officials more time to deal with the backlog. Source: Julie Anderson, *Omaha World-Herald*, 11/14/97

NWF Slams State Runoff Programs - Seventeen states do not even minimally comply with federal regulations designed to protect waters from polluted runoff, according to a *National Wildlife Federation* (NWF) report released in early October. The *Clean Water Act* requires states to inventory waters at risk from nonpoint-source pollution, then determine acceptable levels of pollution and implement rules to keep contamination below those levels. The NWF rated all 50 states on their compliance with this provision, giving grades of "failing," "poor," "weak" or "good," but not one state received a rating of "good." The group notes that in particular, MD and VA "could have been spared" from recent outbreaks of *Pfiesteria* if they had followed the act's runoff provisions. Source: National Journal's GREENWIRE, *The Environmental News Daily*, 10/14/97 and *National Wildlife Federation* News Release 10/9/97

OH Barge Firm Sentenced - A barge transport company and its former vice

president will pay fines totaling \$272,500 and serve two years probation for conspiring to dump oil into the Ohio and Mississippi rivers. Cincinnati-based *M/G Transport Services Inc.* and J. Harschel Thomassee, who retired in 1992, were convicted in 1995 of a felony charge of violating the *Clean Water Act* and a misdemeanor charge of failing to report an oil spill. On 7/7, US District Court Judge Herman Weber in Cincinnati reversed several related jury verdicts against the firm and Thomassee, citing a lack of evidence. During sentencing in late October, Weber noted that the company has agreed to a \$3.9 million settlement with the federal government. He declined to impose the maximum fine of \$700,000 on the company, but he warned that the firm could face additional fines if it is found guilty of any other violations during probation. Thomassee will pay a \$22,500 fine. Source: John Nolan, *AP/Journal of Commerce*, 11/4/97

OH sewage release - The Metropolitan Sewer District in Cincinnati, OH, in early October released 6.5 million gallons of raw sewage into the Ohio River, "creating a mess at a nearby marina." The district said it intentionally released the waste to finish construction at its Little Miami treatment plant, but that the material was supposed to have been screened to remove solids and chlorinated to kill bacteria. Source: *AP/Cleveland Plain Dealer* online, 10/15/97

PA Farm Waste Plan - PA agriculture officials on 10/9 approved the first manure-management plan under new state rules that are "among the most stringent" in the US. To prevent groundwater pollution and curb runoff of animal waste into state waterways, about 2,500 livestock and poultry producers in PA are now required to show that manure is being properly applied on-site or safely disposed of elsewhere. Doug Goodlander of the state Agriculture Dept. said the rules will not dramatically impact farmers because most already have nutrient-management plans. Dan Greig, a Chester County, PA, environmental official, said the cost of hiring consultants to develop waste-management plans will be offset by the savings from using free manure instead of commercial fertilizers. In exchange for adopting

the controls, farmers will be granted limited protections if manure problems occur. Source: Susan Stranahan, *Philadelphia Inquirer*, 10/10/97

SD Tribes/Mining Suit - The Justice Dept. and a SD Indian tribe are seeking legal redress from a mining firm they contend has polluted several rivers with toxic mine tailings. In a suit filed on 11/25 in the US District Court in Rapid City, SD, the DOJ and the *Cheyenne River Sioux* allege that San Francisco-based *Homestake Mining Co.* fouled waterways with more than 100 million tons of tailings laced with cyanide, mercury, arsenic and other gold-mining waste. The suit is similar to one filed in 9/97 by SD charging that the firm polluted Whitewood Creek in the Black Hills for about 100 years, stopping in 1977. An 18-mile stretch of the waterway was on the federal Superfund list for 10 years until it was cleaned up and removed last year. The most recent suit, filed under Superfund and the *Clean Water Act*, seeks yet-undetermined damages to restore wildlife habitat and clean up federal and tribal property near the Belle Fourche, Cheyenne and Missouri rivers. Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 11/26/97 and AP/San Francisco Chronicle/Examiner online, 11/26/97

TX Springs - "Thousands" of natural springs in TX have dried up over the past few decades, in part because state laws "provide little protection" against their demise. Dating from about 1900, the "rule of capture" in TX allows cities, farmers and industrial plants to pump "unlimited" amounts of groundwater from wells on their property -- "even if this causes springs to dry up". Other state and local laws have fostered urban sprawl, which has also tapped spring flows and polluted the aquifers that supply them. One study estimates that one in four springs has been destroyed. The decline of springs has threatened public water supplies and "a host of unique species", such as the endangered Barton Springs salamander, that need the steady temperature and flow of the springs to thrive. In west TX, state and federal wildlife officials have

fashioned an "ingenious" deal with farmers who irrigate with coveted water from San Solomon Springs. To preserve habitat for the endangered Comanche Springs pupfish and the Pecos gambusia, officials secured a "small portion" of the farmers' water allocation and created a ciénega, or a "prime" desert wetland habitat. In return, the farmers' potential liability under the *Endangered Species Act* for harming the fish "has been vastly reduced". Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 11/26/97 and Ralph Haurwitz, *Austin American-Statesman*, 11/23/97

Value of beach recreation - CA officials are seeking \$20 million in damages stemming from a 1990 oil spill "in a complex civil suit" that "promises to raise significant legal issues about how to put a price tag on an oil spill's effects." The "central question" will be "how to calculate the cost to the public of a lost day at the beach." The state contends it is owed \$15/day/person -- or \$12 million -- from Attranco, which owned the tanker that spilled 400,000 gal. of oil off the coast of Huntington Beach in February 1990. CA seeks another \$8 million in civil penalties for the unlawful discharge of oil. The Attranco shipping company's lawyer, David Woolley, asserts that only 208,000 gal. spilled. He says his client should pay at most \$6/person/day, or \$1.2 million, for the spill that closed some popular beaches for 5 weeks. Michael Leslie, an attorney for CA, said the trial is one of the first to focus on the "loss of use" issue, which has drawn the attention of both environmental and oil industry groups. Source: Deborah Schoch, *Los Angeles Times*, 10/5/97

WI Cranberry Marshes - As WI farmers seek to take advantage of rising demand for cranberries, some environmentalists are concerned that farming operations are encroaching on sensitive wetlands. In the last 5 years alone, the amount of land devoted to growing cranberries in WI -- the top producer in the US -- has increased by 25% to more than 15,000 acres. Some predict the state's cranberry industry could triple in coming years. But enviros worry that the expansion of cranberry bogs will affect neighboring wetlands that filter pollutants from area waterways and serve as critical

habitat for loons, herons, osprey, bass and bluegill. The USEPA this year has filed four cases against WI cranberry growers whom the agency contends have expanded into sensitive areas without required permits. But despite opposition from environmentalists and fishing groups, the *WI Natural Resources Board* has recommended that the state legislature ease rules governing expansion of cranberry bogs. Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 11/26/97 and Peter Kendall, *Chicago Tribune*, 11/25/97

WV Development - "Rapid" tourism development in WV's Canaan Valley threatens to choke the Blackwater River unless ski resorts, state parks and condominium complexes substantially limit their sewage discharges, say federal and state regulators. The USEPA and the WV Dept. of Environmental Protection on 10/22 proposed that sewage discharges in the valley be cut by as much as 75%. The growing amount of discharge spurred by development is depleting the supply of dissolved oxygen in the Blackwater, according to a joint report by the agencies. The report was required by a settlement of a 1995 suit filed under the *Clean Water Act* by the *Ohio Valley Environmental Coalition* and the *West Virginia Highlands Conservancy*. Meanwhile, the DEP has sued the *Halltown Paperboard Co.*, contending the mill's nitrogen and suspended solids discharges into Flowing Spring Run have frequently exceeded state limits. Rep. Bob Wise (D/WV) has also been urging *Allegheny Wood Products* to preserve the tourism value of the Blackwater Canyon as it logs a 3,000-acre parcel adjacent to the Monongahela National Forest and Blackwater Falls State Park. The firm plans to harvest 500 acres. Wise's call came as the state Division of Natural Resources (DNR) announced that WV in FY97 spent \$11 million more on state parks and forests than it brought in -- "the largest gap to date." But DNR Deputy Chief Ken Caplinger on 11/3 noted that despite the subsidies, the state's parks are among the most self-sufficient in the nation. Source: Ken Ward, *Charleston [WV] Gazette*, 11/2/97; USA Today, 11/3/97; Ward, *Charleston [WV] Gazette*; AP/Charleston [WV] Gazette, 11/3/97; AP/Charleston [WV] Daily Mail, 10/31/97; AP/mult., 11/4

Yellowstone Mine - Crown Butte Mines Inc. has given the federal government until 1/12/98 to complete an agreement to halt the firm's proposed *New World Mine* outside Yellowstone. This marks the fourth deadline extension since the original agreement was announced by President Clinton in 8/96. Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 10/17/97 and Erin Billings, *Billings Gazette*, 10/15

Dealing with Natural Disasters: A New Model

A new model of public-private cooperation is beginning to address the staggering costs of natural disasters, which in recent years have averaged \$1 billion/week in the US. *Public Private Partnership 2000* (PPP 2000), a unique alliance of Federal, private-sector, and non-profit agencies, is redefining society's approach to handling earthquakes, floods, hurricanes, tornadoes, landslides, wildfires and other natural disasters.

"This is a historic occasion," said Harvey G. Ryland, president and chief executive officer of the *Institute for Business and Home Safety* (IBHS), welcoming approximately 100 invited guests to the first PPP 2000 forum. "From home builders to home buyers, inspectors to insurers, private citizens to public interest groups, researchers to regulators, PPP 2000 brings all stakeholders to the table to develop durable, long-term solutions to the spiraling toll of natural disasters."

The mid-September forum was the first in a series dedicated to exploring new approaches to reducing the economic, environmental, and human costs of natural disasters. The forum, *Insurance Initiatives of the Private Sector*, was cosponsored by the U.S. Subcommittee on Natural Disaster Reduction (SNDR) and IBHS.

More than 36 million people now live in counties vulnerable to hurricanes along the Gulf and Atlantic coasts. The total insured exposure is estimated at \$3.15 trillion on those coasts alone. The projected cost of a repeat of the 1906 San Francisco earthquake is \$105 billion in insured

losses, 8,000 deaths, and 18,000 serious injuries. A repeat of one of the 1811-1812 earthquakes in the New Madrid zone could cause more than \$100 billion in insured losses.

"The costs of dealing with disasters are simply too great for any one sector of society to handle," said Dr. William Hooke, chair of the SNDR. "We need to create effective partnerships among all the interested parties, each of whom brings significant knowledge and a unique perspective to the issue."

Over the next year, PPP 2000 will sponsor more than a dozen forums on topics such as:

- the uncertainty of managing cata-



Missouri River floodplain residence destroyed during the 1993 floods.

strophic risks (12/97),

- cities and megacities at risk (1/98), and
- reducing losses from floods (3/98). "At each forum, our goal will be to develop specific strategies or actions to mitigate the effects of natural disasters," said Hooke. "For example, in discussions at the first forum, the participants proposed the creation of a *Disaster Impact Statement*, analogous to the Environmental Impact Statement required for any significant public or private development/reconstruction activity."

"Two other essential components for reducing the losses arising from natural disasters in the US are sound applied research and a better knowledge of the natural hazards with which we live," said Ryland. "The creation of PPP 2000 reflects an awareness that neither government regulation nor market-based practices alone sufficiently protect the Nation and its citizens. A coordinated effort among all the stake-

holders is needed to develop lasting solutions that enable people to live and prosper in an atmosphere of personal safety and financial security."

PPP 2000 is a cooperative endeavor of the 19 Federal agencies forming the SNDR (subcommittee of the *National Science and Technology Council's Committee on the Environment and Natural Resources*), the IBHS (a property/casualty insurance organization dedicated to reducing deaths, injuries, property damage, economic losses, and human suffering caused by natural disasters), and more than 20 other private-sector organizations.

Copies of the Report on the first Forum are available from the USGS EarthFax fax-on-demand system at (703) 648-4888; press 1, then press 2, then request document number 1800.

Contact: Kathleen Gohn (SNDR) 703/648-4732 or Margaret L. Sheehan (IBHS) 617-722-0200, x. 214

Topeka Shiner Proposed for Listing

The U.S. Fish and Wildlife Service (FWS) is seeking public comments on a proposal to list a small native fish, the Topeka shiner *Natropis topeka*, as an endangered species under the U.S. *Endangered Species Act*.

The Topeka shiner once lived in portions of KS, IA, MN, MO, NE, and SD. The species is now found primarily in a few scattered tributaries within the Missouri and Mississippi river basins and the Flint Hills region in KS. Many populations are very reduced in numbers, and are geographically isolated from other populations.

The Topeka shiner is already protected under state law in MO and KS. MN, NE, and SD consider it a species of concern, with no legal protection. The Topeka shiner does not receive any special recognition in IA. The species is adapted to prairie streams with high water quality and pools containing cool, clear water, most often associated with spring or seep flows. The fish is considered an indicator of the health of aquatic ecosystems, which in turn has implications for the quality of water available for human use and

recreation.

The primary threat to the Topeka shiner today is loss of habitat from stream sedimentation and decreased water quality. The fish would benefit from actions that protect natural stream systems, their riparian vegetation and their natural flow.

A conservation agreement is in place for the Topeka shiner in the *Mill Creek Watershed District* in KS. The agreement was developed jointly by the FWS, the KS Department of Wildlife and Parks, and the *Mill Creek Joint Watershed District No. 85*. It focuses on reducing and eliminating some of the more significant threats to the species resulting from flood control measures proposed for implementation within the basin, maintaining core populations of the species necessary for long-term viability, while still allowing the District to achieve an effective level of flood control.

One of the major threats facing the Topeka shiner, in portions of its range, is the construction of dams. Due to a combination of factors, including increased predation and blockage of upstream and downstream migration, the Topeka shiner has been known to disappear from streams where dams are constructed.

The *Mill Creek Watershed Joint District No. 85* approached the FWS and the KS Department of Wildlife and Parks in an attempt to coordinate their proposed tributary dam construction in such a way as to minimize impacts on the species and ensure its maintenance in the basin into the future. The Conservation Agreement outlines specific steps which will be taken by all three entities in an effort to meet the dual goals of species conservation and flood protection. At the heart of the agreement is the designation of all streams in the Mill Creek basin based on their degree of importance to the species.

Anyone with biological information or comments on the status of this species is requested to provide information to the U.S. Fish and Wildlife Service, Ecological Services, 315 Houston Street, Suite E, Manhattan,

KS 66502. All data received will be reviewed by the FWS before a final decision is reached.

Source: FWS News Release

Riverine Water Needs

Brian D. Richter, Jeffery V. Baumgartner, Robert Wigington, and David P. Braun of *The Nature Conservancy* have proposed a new method for setting streamflow-based river ecosystem management targets. Their new method, called the '*Range of Variability Approach*' (RVA), derives from aquatic ecology theory concerning the critical role of hydrological variability, and associated characteristics of timing, frequency, duration, and rates of change, in sustaining aquatic ecosystems.

The method is intended for application on rivers wherein the conservation of native aquatic biodiversity (i.e. Topeka shiner - see previous article) and protection of natural ecosystem functions are primary river management objectives. The RVA uses as its starting point either measured or synthesized daily streamflow values from a period during which human perturbations to the hydrological regime were negligible. This streamflow record is then characterized using 32 different hydrological parameters. Using the RVA, a range of variation in each of the 32 parameters, e.g. the values at + 1 standard deviation from the mean or the 25th to 75th percentile range, are selected as initial flow management targets.

The RVA targets are intended to guide



the design of river management strategies (e.g. reservoir operations rules, catchment restoration) that will lead to attainment of these targets on an annual basis. The RVA will enable river managers to define and adopt readily interim management targets before conclusive, long-term ecosystem research results are available. The RVA targets and management strategies should be adaptively refined as suggested by research results and as needed to sustain native aquatic ecosystem biodiversity and integrity.

The RVA is designed to bridge a chasm between applied river management and current theories of aquatic ecology. Virtually all methods currently in widespread use for determining instream flow will possibly lead to inadequate protection of ecologically important flow variability, and ultimately to the loss of native riverine biodiversity and ecosystem integrity. Current aquatic ecology theory and empirical observations suggest that a hydrological regime characterized by the full or nearly full range of natural variation is necessary to sustain the full native biodiversity and integrity of aquatic ecosystems. The RVA addresses this paradigm by incorporating into river management targets a suite of ecologically relevant hydrological parameters that comprehensively characterize natural streamflow regimes.

The dependence of native aquatic biota on specific values of the hydrological parameters employed in the RVA has not been widely, nor comprehensively, substantiated with statistical rigor. Much of what aquatic and riparian ecologists know or believe about the biotic consequences of flow alteration has been derived from:

- comparisons of dammed vs undammed rivers;
- measured differences in fish or invertebrate communities at increasing distances downstream from dams;
- correlations developed between long-term ecosystem changes and a limited number of hydrological parameters; or
- simply from inferences drawn from (relatively short-term) observations of flow and fluvial processes and biotic distributions or growth rates associated with hydrological gradients.

Virtually all such studies have statisti-

cal weaknesses that limit inference regarding causation between flow and biota, because flow perturbations cannot be replicated or randomly assigned to experimental units.

While the accumulated evidence in support of the natural flow paradigm is overwhelming, others may be less convinced or ready to use it as a guide in river management. In the present RVA design, flexibility in setting specific flow management targets was emphasized, while retaining what could be considered to be the backbone of the approach: the use of natural variability characteristics as ecosystem management guides, accompanied by adaptive refinement of flow targets as ecological research accumulates.

Source: Freshwater Biology (1997) 37, 231-249 31997 Blackwell Science Ltd, Freshwater Biology, 37, 231-249

Contact: Brian D. Richter, Biohydrology Program, *The Nature Conservancy*, PO Box 430, Hayden, CO 81639; Jeffrey V. Baumgartner and Robert Wigington, *The Nature Conservancy*, 2060 Broadway, Suite 230, Boulder, CO 80302; and David P. Braun, *The Nature Conservancy*, 1815 N. Lynn St, Arlington, VA 22209

Effects of Fish in Lakes

Field surveys and experiments conducted over several decades have shown that fish can directly or indirectly affect virtually all biological and chemical components of lake ecosystems. Despite the publication of several excellent reviews and books on aspects of fish effects, a comprehensive bibliography has not been available.

Dr. Ray W. Drenner, a professor of biology at Texas Christian University, has recently compiled and installed on his home page a 1500-reference bibliography on the effects of fish on lakes (<http://www.bio.tcu.edu/bio/drenner.html>). The bibliography covers a wide range of topics including: feeding behavior and selectivity of freshwater fish; factors controlling prey availability and fish feeding

rates; niche partitioning and competition; effects of fish removal for renovation of fish communities; fish polyculture; effect of species introductions, biomanipulation; and direct and indirect effects of fish on physical, chemical, and biological components of lakes.

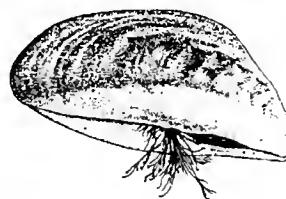
The literature published on this ecologically important topic has grown rapidly since 1960. The bibliography is organized by year of publication, and then by author, to give users a sense of how the field has developed and changed through time. It is hoped that this bibliography will assist new researchers find their way into this large literature.

Contact: Ray E. Drenner, Department of Biology, Texas Christian University, P.O. Box 32916, Fort Worth, TX 76129

Source: Ecological Society of America, Bulletin; 78(3) July 1997

Zebra Mussel Control

Forty-seven chemicals having potential for preventing the attachment of zebra mussels *Dreissena polymorpha* have been identified and tested. For each chemical, 15 zebra mussels (5-8-mm shell length) in each of two replicates and six treatments were exposed for 48 hrs. followed by a 48-hr. postexposure period in untreated water. Eleven of the chemicals inhibited the reattachment of zebra mussels after the 48-hr. exposure; eight had EC₅₀ values ranging from 0.4 to 5.4 mg/L, and three had EC₅₀ values ranging from 19.4 to 29.0 mg/L. Based on an analysis of chemical cost, solubility in water, anticipated treatment concentrations, and potential hazards to humans or the environment, three of the most promising chemicals, all antioxidants, (butylated hydroxyanisole [BHA], tert-butylhydroquinone, and tannic acid) were tested on nontarget fish (bluegill, *Lepomis macrochirus*; channel catfish, *Ictalurus punctatus*; and rain-



"zebra mussel"

bow trout, *Oncorhynchus mykiss*). These chemicals were not selectively toxic to zebra mussels; only the tests with bluegill and BHA and with channel catfish and tannic acid had 48-hr LC₅₀ values greater than the concentrations effective for preventing the reattachment of zebra mussels. Although the attachment of zebra mussels can be prevented with selected antioxidants, an alternative formulation should be investigated to minimize effects on nontarget organisms, such as fish.

Source: Abstract from W. Gregory Cope, Michelle R. Bartsch and Leif L. Marking. 1997. Efficacy of Candidate Chemicals for Preventing Attachment of Zebra Mussels (*Dreissena polymorpha*). Environmental Toxicology and Chemistry, Vol. 16, No. 9, pp. 1930-1934.

Unionid Mussels of Kansas

An illustrated guide to the Unionid Mussels of KS is now available from Karen J. Couch. Forty-five KS mussel species and forms (including rare and extirpated) are depicted in full color. Interiors and exteriors of shells are shown. The easy to read text, gives shell description, sexual dimorphism, size, habitat, known fish hosts, range, and similar species. Price is \$56.95, plus \$4.00 for shipping and handling per book. Remit payment (check or money order) to Karen Couch, 12 Ventura Lane, Olathe, KS 66061-3057. Web site: <http://www.molluscs.net/karen.htm>.

USFWS May Permit Unlimited Cormorant Kill

The US Fish and Wildlife Service (FWS) is considering a proposal to allow fish farmers in 33 states to kill unlimited numbers of double-crested cormorants, a large water bird that is protected under the *Endangered Species Act*.

Catfish farmers in the South say their ponds are "magnets" for migrating cormorants, which consume 18-20 million catfish each winter and cost them millions of dollars worth of their potential harvest.

Because the species is protected, catfish farmers need FWS permits to shoot a limited number of the birds and must report the number they kill. Biologist John Trapp of the FWS said fish farmers shoot 4-8,000 birds each year without a noticeable impact on the migrating population. Under the relaxed rules, Trapp estimated that 92,000 birds, or 5-10% of the population, would be shot.

National Aquaculture Assn. President Jim Ekstrom said the proposed policy change "is vital to our industry." But conservation groups contend the depredation rule would set a "dangerous precedent" because it is intended to ease an administrative and budgetary burden within the FWS. The FWS is expected to make a decision on the proposal later this year.

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 10/7/97

Environmental Values Polls

Two out of every three Americans consider themselves environmentalists, and "public concern is rising," according to a recent poll by the McLean, VA-based research firm *Wirthlin Worldwide*. Of those responding to the survey:

- 68% "place[d] themselves squarely in the pro-environmental camp",
- only 4% said they were "unsympathetic" to environmental concerns,
- 76% said environmental improvements should be made regardless of cost,
- only 25% said economic growth should be sacrificed to protect the environment, and
- 70% said there can be a balance between economic growth and the environment.

The pollsters report that Americans' concern about the environment appears to be "rooted in an increasing awareness that such issues affect their personal health and well-being." For example:

- 37% said current environmental problems have harmed them personally,
- 42% believe air quality in their community has grown worse,
- 79% said they thought environ-

mental problems would get significantly worse during their lifetimes,

- 76% said they are more concerned about the environment now than five years ago,
- Almost half said there was too little environmental regulation,
- 21% said there was too much,
- 41% agreed that environmental groups sometimes exaggerate environmental threats to garner public support,
- 56% "believe the threats are as serious as claimed.", and
- 37% said the media exaggerates environmental threats.

With one exception -- the computer industry -- more people associate industries with causing environmental problems than with solving them. But asked how good a job businesses and governments are doing at protecting the environment, respondents give above average grades" -- ranging between 5.6 and 6.4 on a 1-10 scale -- with "businesses in your community" scoring highest.

Wirthlin Worldwide, headed by Pres. Reagan's former pollster Richard Wirthlin, surveyed 1,040 adults from 8/22-31/97. The poll has a margin of error of +/-3%.

In a second poll developed by the Newseum in Arlington, VA, the *Freedom Forum Media Studies Center* in New York and the *Roper Center for Public Opinion Research* at the University of CT, 59% of those responding said they were "very" or "extremely" interested in news coverage of environmental issues. Only local news and crime rated higher in interest. But when asked about the quality of media coverage on the environment, only 44% rated it as "good" or "excellent." The poll of 1,500 adults was conducted from 1/10-26/97 and has a margin of error of +/-2.5%.

According to a survey released by the DC-based *National Environmental Education and Training Foundation* (NEETF). People with higher levels of environmental knowledge see greater opportunities for compromise between economic and environmental demands,

The 1997 NEETF/Roper Starch Worldwide Survey is the sixth in an annual series that has gathered data on Amer-

icans' views on the environment. For the first time this year, the pollsters also assessed people's knowledge of environmental issues with a 12-question, "fairly easy" quiz. But only 32% had nine or more correct responses, and only 10% made the "Environmental Dean's List" with 11 or more correct answers. For example, only 33% of respondents knew that the primary source of electricity in the US is burning fossil fuels; nearly one-half thought hydropower was the main source of energy; only 23% knew that runoff is the chief cause of water pollution; and nearly one-half thought factories were the main source. The pollsters observe: "If the public fails to understand complex or even simple environmental issues, it will be much more difficult to get their support for changes and remedial programs."

For the sixth year, a clear majority -- 65% to 25% -- said environmental protection and economic development "can go hand-in-hand." When asked to choose whether the environment or the economy should be given priority if no compromise were possible, more people said they would choose the environment (69%) over the economy (15%). But illustrating the link between environmental knowledge and opinions, 74% of respondents with report-card scores of 9 or higher believed compromise was generally possible, compared to only 52% of those who scored 5 or lower.

For the first time, the survey also assessed respondents' environmental behaviors. Ninety-nine percent said they try to conserve energy, 91% save water and 88% recycle. And people who participate in outdoor sports scored "significantly" higher than others on the environmental report card, averaging 7.5 questions answered correctly compared to 6.3.

Conducted by research firm *Roper Starch Worldwide*, the random telephone poll of 1,501 adult Americans received funding from the USEPA and the CA-based *Compton Foundation*. It has a margin of error of +/- 2.5%.

Additional data from the poll follow:

Do you think environmental protection laws and regulations ...

	1997	1996	1992
Have not gone far enough			
46%	45%	63%	
Have struck the right balance	27	28	17
Have gone too far	17	19	10

Do you think environmental protection and economic development can go hand in hand, or that we must choose between them?

Hand in hand	65%
Must choose	25
Depends	4
Don't know	6

What do you think is the most important environmental problem our country faces?

Pollution	60%
Garbage and landfills	9
Natural resources	6
Other	11
Don't know	14

Should environmental education be taught in schools?

Should be taught	95%
Should not be taught	2
It depends	2
Don't know	2

Technology will help solve environmental problems

Strongly disagree	13%
Mostly disagree	20
Mostly agree	41
Strongly agree	22
Don't know	4

In yet another poll conducted for *NBC News* and the *Wall Street Journal*, it was noted that voters believe that hazardous or toxic waste is the most serious environmental problem in the US. Twenty percent of the 1,007 respondents polled identified hazwaste as the top problem. The destruction of natural resources was cited by 18% of respondents, followed by solid waste (13%), water pollution (13%), global warming (10%) and air pollution (9%). Although global warming was cited as a top issue, 59% of respondents said more research on climate change is necessary before the US takes action to prevent it. Twenty-eight percent of those polled said immediate action is needed, while 9% said concern over climate change is "unwarranted." The poll, conducted by

DC-based Hart-Teeter from 10/25-28/97 has a margin of error of +/- 3%.

Finally, a *USA Today/CNN/Gallup* poll reveals that the public ranks the environment as the 7th most important issue facing lawmakers, behind education, crime, Social Security, Medicare, health care, and budget deficits. Global warming ranked as the 9th most important issue. The poll of 1,008 respondents was conducted from 10/27-29/97, and has a margin of error of +/-3%.

Sources: *Wirthlin Report*, 8/9/97; Jerry Spangler, *Salt Lake Deseret News*, 10/9/97; National Journal's GREENWIRE, *The Environmental News Daily*, 10/15/, 11/3, and 11/13/97; Richard Benedetto, *USA Today*, 10/31; and NEETF release, 11/13

Enviro-Performance Equals Economic Profit

Firms that earn high marks for their environmental practices are better financial performers, according to two new studies. The *World Business Council on Sustainable Development* (WBCSD) found that "environmental value drivers," or actions to boost environmental performance, can give companies a competitive edge regardless of their size or sector. Investment firms are increasingly using these indicators in financial analyses, according to a WBCSD report, which was produced by executives from 40 companies including *DuPont Co.* and *Swiss Bank Corp.*

Another new study of environmental performance and profits shows that companies that go "beyond compliance" yield the highest returns on assets. Michael Russo of the University of Oregon and Paul Fouts of Golden Gate University ranked the environmental performance of 243 companies on a five-point scale. The study, which will be published in the *Academy of Management Journal*, found that each one-point increase in environmental performance was reflected in a 1.6% higher return on assets.

Russo said his study does not prove a direct link: "Environmental perfor-

mance causes something, which causes something else, which causes increased performance". The WBCSD said a direct relationship between performance and profit often is "not readily apparent." But the WBCSD study predicts that environmental benchmarking -- both within and between industry sectors -- "will emerge as an increasingly important tool" for assessing environmental performance more objectively.

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 10/2/97

McKnight Foundation Expands Mississippi River Program

The board of directors of *The McKnight Foundation* has voted to expand its program of environmental grant making to protect the Mississippi River. Over the next 5 years McKnight will dedicate \$23 million to river conservation, up from \$10 million during the previous 5 years. McKnight is the largest environmental funder in the Mississippi River Valley.

By the year 2000 McKnight plans to contribute \$5 million/yr. to conservation efforts on the Mississippi River and its tributaries. That compares to about \$3 million this year. The program will continue to emphasize the Upper Midwest, although grants are made for work in all 10 Mississippi River states.

The board approved the increase after looking at the program's impact over its first 5 yrs. "It was clear that the environmental organizations we support have made gradual but steady progress against difficult odds," said Michael O'Keefe, the Foundation's executive vice president. "They have helped protect drinking water by lowering pollution in the Mississippi, reduce flood damages, conserve riverside natural areas, and protect low-income communities from toxic contamination. But their work has just begun. This is a long-term effort whose ultimate goal is to leave our natural resources clean and abundant for future generations."

During the next 5 years McKnight's Mississippi River Program will focus on

four types of projects:

- **Creating Mississippi River greenways in Minneapolis-St. Paul, the Quad Cities of IA and IL, and St. Louis, MO.** The Foundation will support riverfront parks, trails, and open areas that encourage recreation along the river, protect riverside lands, help rehabilitate inner-city neighborhoods, buffer drinking water from pollution, and increase appreciation of the river as a community asset.
- **Protecting rural watersheds and river corridors.** Most such grants will go to organizations working in the Minnesota River Valley and the bluffs from southeastern MN through IA and IL. Activities may include restoring wetlands, educating the public about clean water issues, and reducing farm runoff that pollutes the Mississippi downstream. For example, runoff from Midwestern farms and cities has created an oxygen-depleted "dead zone" in the Gulf of Mexico, spanning thousands of square miles, where fish and plants are harmed by pollution.
- **Ensuring that environmental protection receives equal consideration with economic development in federal navigation and flood control projects.** The Foundation will provide funds to promote environmentally beneficial river projects and to expose wasteful or damaging programs.
- **Building a potent constituency for river protection.** The Foundation will make grants to strengthen the capacity of groups protecting the Mississippi's environment and to support other conservation efforts all along the river, including projects to help poor people reduce pollution in LA and other southern states.

More information is available on McKnight's grant program in their free booklet entitled: *Mississippi River Program: Guidelines for Grant Applicants*.

Contact: Sylvia Paine, Communications Officer or Dan Ray, Program Officer for the Environment (612) 333-4220

Sixteen Worst Subsidies

River of Subsidy - How Taxpayer Investments are Wasted in the Mississippi River Basin, is a report re-

leased on 10/23 by the *Taxpayers for Common Sense*. The report funded, in part, by the *McKnight Foundation* (see previous article) lists the following as the 16 worst taxpayer subsidies in the Basin:

- **Upper Mississippi Lock Expansions:** Doubling the size of three locks on the Mississippi River would increase an unjustified subsidy for commercial navigation, cost federal taxpayers \$500 million, fuel demand for even more lock expansions and exacerbate environmental problems.
- **Yazoo Backwater Pumping Station:** This project is designed to reduce flooding on farmland yet would increase flooding in other areas and cost federal taxpayers \$143 million.
- **Mississippi River Gulf Outlet:** Operation of this waterway for just 3.5 ships/day costs federal taxpayers \$13 million/year and destroys coastal marsh and wildlife habitat.
- **West Pearl River Navigation:** Reopening this waterway for only minimal commercial traffic would cost federal taxpayers \$15 million over five years and destroy one of the most recognized scenic rivers in the country.
- **Big Sunflower River Flood Control:** Dredging of the Big Sunflower River would only protect against 1-3 year floods, yet would cost federal taxpayers \$62 million and destroy habitat for rare native freshwater mussels.
- **Bonnet Carre Freshwater Diversion Project:** This project was designed to mitigate environmental damage, but it threatens to harm the environment more than it would help and would cost federal taxpayers \$63 million.
- **Missouri River Navigation:** Operation and maintenance of this underused commercial waterway only brings 1% of the river's economic benefits, costs federal taxpayers \$35 million every 5 years and has adverse effects on several fish species.
- **Red River Waterway:** The Corps reported that the \$600 million federal cost to extend this waterway would outweigh the project's benefits and would be an environmental and human health hazard.
- **Lock and Dam 1 and St. Anthony Falls Locks and Dams:** Even the Corps can hardly justify the \$3 million annual operation and maintenance expenses for this underused system that could be put to better use.
- **Non-Federal Levee Repairs:** The federal government has wasted mil-

lions of taxpayer dollars and promoted floodplain development by repairing local levees for over fifty years.

- **St. James Bayou-New Madrid Floodway:** Local residents would pay very little while federal taxpayers would be stuck with an \$80 million tab and be exposed to unnecessary risks for this flood-control project, which would destroy over 20,000 acres of fish and wildlife habitat.
- **Kaskaskia River Navigation:** This channel was constructed to support the nation's demand for high sulfur coal which has curtailed in recent years, as has commercial traffic on the channel yet federal taxpayers still invest \$1.4 million annually to keep the channel running.
- **Marsh Lake Dike Construction:** This \$12 million project is designed to replace a functional, existing structure that is less expensive and less harmful to the environment.
- **National Flood Insurance Program:** This program was originally intended to prevent people from living in the floodplain but had the opposite effect: subsidizing development in the floodplain and shifting risks from landowners to federal taxpayers.
- **Federal Crop Insurance:** Federal crop insurance costs federal taxpayers too much because it does not discriminate against farmers who farm in high-risk floodplain areas, and it overpays private insurance companies for their services.
- **Cabins Under Corps Jurisdiction:** Built counter to Corps policy, these cabins were scheduled to be phased out in 1988 but remain an eyesore and a waste of taxpayer money.

This report has to be given credit for equally bashing nearly every segment of society who, in one way or another receives a government subsidy. In so doing, however, it may do more harm than good, in that those targeted by the report may just dig in their heels and fight back against what they view as a frontal attack by the "environmental lunatic fringe".

The projects listed probably do need to be altered, or in some cases drastically changed, or even eliminated; but we have to be careful not to "throw the baby out with the bath water". We have made great progress in the last 20 years working with developmental interests on our rivers to soften projects and bring about important habita

restoration projects.

There isn't a government program in existence that couldn't use some scrutiny and periodic "belt tightening" -- including environmental programs. All subsidized programs need a periodic, fair, and impartial review by an independent auditor, so that all of the benefits and impacts generated can clearly be displayed. This would "put

them to the test" to see if they can stand on their own in the face of the economic costs and the tangible and intangible damages that they generate. Only after passing such a test should any subsidy be continued.

Unfortunately, many of the projects listed have not been put to that test; in fact most, haven't been reviewed in decades. Such a review is needed,

and if this report provides the catalyst to make that happen, then it has served a useful purpose. If not, it has probably done more harm than good.

Copies of the entire report are available from *Taxpayers for Common Sense* at (202) 546-8500, Ext. 111. The report is also available on the internet at www.taxpayer.net.

Meetings of Interest

January 6-15: The Degraded Earth Renewed: Current Practice and Future Prospects for Land Restoration and Conservation, Oxford, England. Contact: International Seminars, 1 Beaumont Place, Oxford, OX1 2PJ. FAX: 44 (0) 1865-557368, or see <http://www.britcoun.org/seminars>.

January 10-12: Managing Manure in Harmony with the Environment and Society, Ames, IA. Contact: Bob Ball, NRCS, Parkade Center, Suite 250, 601 Business Loop 70 West, Columbia, MO 65203, (573) 284-4370; email: bobb@mo.nrcs.usda.gov.

February ?: Lower Mississippi River Conservation Committee 5th Annual Meeting, Memphis, TN. Contact: Ron Nassar, LMRCC Coordinator (601) 629-6602.

March 6-8: Freshwater Mussels Conservation, Captive Care, & Propagation, Columbus, OH. Contact: Doug Warmolts, Columbus Zoo, 9990 Riverside Drive, P.O. Box 400, Columbus, OH 43065, (614) 645-3400, email: dwarmolt@colzoo.org

March 9-10: Restoration Evaluation Criteria Workshop, San Diego, CA. How should performance of restoration projects be evaluated, and multiple (and often conflicting) restoration goals be achieved? What should be the methods of evaluating achievement of these goals, and how close to achievement of performance goals is good enough? Contact: Edith Read, SERCAL President, c/o Psomas and Associates, 3187 Redhill Avenue, Suite 250, Costa Mesa, CA, 92626, (714) 751-7373 ext. 2133, Fax: (714) 545-8883. Email: erread@psomas.com.

March 16-19: 8th International Zebra Mussel and other Aquatic Nuisance Species Conference, Sacramento, CA. Contact: Elizabeth Muckle-Jeffs, (800) 868-8776 email: profedge@renc.igs.net

March 17-21: 13th Annual U.S. Regional Association of the International Association for Landscape Ecology, Michigan State University, East Lansing, MI. "Applications of Landscape Ecology in Natural Resource Management", fisheries, human dimensions, planning, range, soils, timber, water, wildlife and other resource subjects will be emphasized. Contact: <http://www.fw.msu.edu/iale98>, or William W. Taylor, Department of Fisheries and Wildlife, 13 Natural Resources Bldg., Michigan State University, East Lansing, MI 48824, (517) 355-1810, Fax: (517) 432-1699, email: iale98@perm3.fw.msu.edu.

March 20-24: 63rd North American Wildlife and Natural Resources Conference, Orlando, FL, Session: Nonindigenous Species: Methods of Introduction and Impacts. Contact: Richard E. McCabe, Wildlife Management Institute, (202) 371-1808

March 22-25: The Floodplain of the Future, 2nd Annual Conference on Natural Resources of the Missouri River Basin, Nebraska City, NE. Contact: Pam Haverland, USGS/BRD, Environmental & Contaminants Research Center, 4200 New Haven Road, Columbia, MO 65201, (573) 876-1841, FAX (573) 876-1896, E-mail: pamela_haverland@nbs.gov.

April 15-17: Team Wetlands: 101 Ways to Win for Wetlands, Arlington VA. The American Wetlands Month Communities Celebration emphasizes

interactive sessions on how to build community wetlands programs and projects. Contact the Terrene Institute at (703) 548-5473; email: terrinst@aol.com.

April 29-May 3: Rivers - The Future Frontier, Anchorage, AK. Contact the River Management Society at (406) 549-0514; email: rms@igc.apc.org.

May 3-6: Watershed Management: Moving from Theory to Implementation, Denver, CO. Water Environment Federation. (703) 684-2400.

June 8-12: 19th Annual Meeting of the Society of Wetland Scientists, Anchorage, AK. Contact: Terry Brock, Box 22014, Juneau, AK 99802, (907) 586-7863, FAX (907) 586-7922, e-mail: tbrock@ptialaska.net or visit the SWS web page at <http://www.sws.org>

June 8-12: GCIP Mississippi River Hydrometeorology Conference "Predicting Climate Variability and its Implications for Water Resource Management, Regal Riverfront Hotel, St. Louis, MO. The conference will highlight scientific developments in the GEWEX (Globe Energy and Water Cycle Experiment continental-scale International Project (GCIP). In addition it will address other climatological, hydrometeorological and environmental research issues in the Mississippi River Basin.



1st International Ictalurid Symposium

June 23-28: First International Ictalurid Symposium - Catfish 2000 Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180, (573) 751-4115, FAX

(573) 526-4047.

8617, Ext. 209.

August 23-27: 128th Annual Meeting of the American Fisheries Society, Harford Civic Center, Hartford, CT. Contact: Paul Brouha, (302) 897-

September ?: 88th Annual Meeting of the International Association of Fish and Wildlife Agencies. Contact: Georgia Department of Natural Resources.

Congressional Action Pertinent to the Mississippi River Basin

Agriculture

H.R. 2692, Bob Smith (R/OR.) to combine the Consolidated Farm Service Agency an the Natural Resources Conservation Service of the Agriculture Department as one agency and to ensure equitable treatment of socially disadvantaged farmers, ranchers and department employees.

Environment

H.R. 2818, Peter DeFazio (D/OR.) to repeal the pilot recreation fee program and establish a royalty on hardrock minerals and direct revenues to public recreational sites managed by the Interior Department and Forest Service.

Fish and Wildlife

S. 361 (Jeffords, R/VT) amends the Endangered Species Act to prohibit the sale, import, and export of products labeled as containing endangered species.

S. 491 (Ford, R/KY) to amend the National Wildlife Refuge System Administration Act of 1966 to prohibit the Fish and Wildlife Service from acquiring land to establish a refuge of the National Wildlife Refuge System unless at least 50% of the land owners in the proposed refuge favor the acquisition.

S. 751 (Shelby, R/AL) to protect and enhance sportsmen's opportunities and conservation of wildlife.

H.R. 374 (Young, R/AK) amends the Sikes Act to enhance fish and wildlife conservation and natural resources management programs.

H.R.1718 (Cunningham, R/CA) to protect and enhance sportsmen's opportunities and enhance wildlife conservation.

H.R. 2894, Wally Herger (R/CA) and Richard Pombo (R/CA) to amend the Endangered Species Act of 1973 enabling federal agencies responsible for the preservation of threatened and endangered species to rescue and relocate members of any of those species that would be taken in the course of certain reconstruction, maintenance or repair of federal or non-federal man-made flood control levees.

H.R.2911, Wally Herger (R/CA) and Richard Pombo (R/CA) to amend the Endangered Species Act improving the ability of individuals and local, state and federal agencies to prevent natural flood disasters.

Flood Insurance

H.R. 230 (McCollum, R/FL) to ensure that insurance against the risk of catastrophic natural disasters, such as hurricanes, earthquakes, floods, and volcanic eruptions, is available and affordable, and to provide for expanded hazard mitigation and relief.

Forests

S. 977 (Robert Torricelli, D/NJ) and John Kerry, D/MA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 to ban clearcutting and strengthen preservation on federal lands, and designate ancient forests, roadless and other areas where no logging may occur.

S. 1058 (Richard Durbin, D/IL) to amend the National Forest Management Act of 1976 to ban timber sales where the cost of making timber available for the sale is greater than the expected revenues from the sale in the Shawnee National Forest in IL.

S. 1253, Larry Craig (A/ID) to streamline the forestry decision-making process in the Bureau of Land Management and Forest Service with a

multi-use outlook.

S. 1254, Larry Craig (A/ID) to outline a process by which states could take over the management of federal lands for 10-year periods with Congress' approval.

H.R.101 (Baber, R/LA) amends the National Forest Foundation Act to extend and increase the matching funds authorization for the foundation, to provide additional administrative support to the foundation, to authorize the use of investment income, and to permit the foundation to license the use of trademarks, trade names, and other such devices to advertise that a person is an official sponsor or supporter of the Forest Service or the National Forest System

H.R.1376 (Eshoo, D/CA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 and related laws to strengthen the protection of biodiversity and ban clearcutting on federal lands and to designate certain federal lands as Northwest Ancient Forests, roadless areas, and special areas, where logging and other intrusive activities are prohibited.

H.R.1861 (Hinchey, D/NY) amends the Forest and Rangeland Renewable Resources Planning Act of 1974, the Federal Land Policy and Management Act of 1976, the National Wildlife Refuge System Administration Act of 1966, the National Indian Forest Resources Management Act, and title 10 of the U.S. Code to strengthen the protection of native biodiversity and to place restraints upon clearcutting and certain other cutting practices on U.S. forests.

H.R. 2127 (Frank Riggs, (R/CA) to streamline Forest Service operation by contracting out some services connected with planning and implementing programs in national forests.

H.R.2458 (Helen Chenoweth, R/ID) to authorize the Agriculture and Interior secretaries to remove forest floor overgrowth and conduct other management practices where federal lands abut urban areas.

H.R. 2789, Cynthia McKinney (D/GA) to eliminate commercial logging on federal lands and facilitate economic recovery and diversification of communities dependent on logging.

Grazing

H.R. 547 (Nader, D/NY) requires the Interior and Agriculture secretaries to establish grazing fees at fair market value for use of public grazing lands.

H.R.2493 (Bob Smith, R/OR) the Forage Improvement Act of 1997, to make "moderate" changes to grazing regulations, such as setting a formula for fees at \$1.84 per adult head of cattle per month, up from the current amount of \$1.35. The bill also would guarantee lease renewal after 10 years if ranchers have followed all lease terms, and it would codify the structure and duties of Resource Advisory Councils, which give the federal government advice on managing federal lands. Approved by the House on October 30.

Land Acquisition

H.R.1487 (Campbell, R/CA) to provide off-budget treatment for one-half of the receipts and disbursements of the Land and Water Conservation Fund, and to provide that the amount appropriated from the fund for a fiscal year for federal purposes may not exceed the amount appropriated for that fiscal year for financial assistance to the states for state purposes.

H.R.1732 (Kildee, D/MI) to amend the Land and Water Conservation Fund Act of 1965 to provide for off budget treatment of the receipts and disbursements of the land and water conservation fund and the accounts established under that act.

Mining

S. 325, S. 326, and S. 327 (Bumpers, D/AR) to repeal the percentage depletion allowance for certain

hardrock mines, provide for the reclamation of abandoned hard-rock mines, and ensure federal taxpayers receive a fair return for the extraction of locatable minerals on public domain lands, respectively.

H.R. 2945, John Duncan (R/TN) and Jim Hansen (A/UT) to amend the Land and Water Conservation Fund to establish a Community Recreation and Conservation Endowment with certain escrowed oil and gas revenues.

Parks

S.991 (Frank Murkowski A/AK) to make technical-changes to Omnibus Parks and Public Lands Management Act of 1996.

H.R.104 (Bartlett, R/MD) authorizes the private ownership and use of National Park System lands.

H.R. 901 (Young, R/AK) to preserve the sovereignty of the U.S. over public lands by requiring that United Nations heritage designations be subject to congressional approval. Approved by the House on October 8.

H.R. 2143 (Miller D/CA) to provide certain escrowed oil and gas revenues be available to improve national parks' visitors facilities.

Public Lands

S. 477 (Hatch, R-UT) amends the Antiquities Act to require an Act of Congress and the consultation with the governor and state legislature prior to establishment by the president of national monuments in excess of 5,000 acres.

S. 691 (Murkowski, R/AK), to require public review and the authorization of Congress for any presidential designations of national monuments, biosphere reserves, and world heritage sites on public lands.

S. 749 (Dorgan, D/ND) to provide for more effective management of the National Grasslands.

S. 1118 (Frank Murkowski, A/AK) to set up a Community Recreation and Conservation Endowment of \$800 million for the state side portion of the Land and Water Conservation Fund

from oil and gas revenues.

S. 1176 (Craig Thomas, R/WY) to elevate the role of local and state governments under the National Environmental Policy Act. NEPA outlines the review process the federal government must follow before taking major actions on federal lands. Environmentalists in general oppose the measure for placing local governments above other residents and groups.

H.R. 919 (Miller, D/CA) establishes fair market value pricing of federal natural assets, and for other purposes.

H.R. 2223 (J.D. Hayworth (R/AZ) To amend the Recreation and Public Purposes Act to allow the conveyance of public land and forests to local education agencies for elementary, secondary and charter school use.

H.R. 2502 (John Duncan, R/TN and Bill Jenkins, R/TN) to amend the Land and Water Conservation Fund Act of 1965 to allow national park units that cannot charge entrance fees to retain other fees.

H.R. 2223, J.D. Hayworth (R/AZ) to amend the Recreation and Public Purposes Act to allow the conveyance of public land and forests to local education agencies for elementary, secondary and charter school use.

Refuges

H.R. 511 (Young, R/AK) to amend the National Wildlife Refuge System Administration Act of 1966 to improve the management of the refuge system.

H.R. 512 (Young, R/AK) to prohibit the expenditure of funds from the Land and Water Conservation Fund to create new National Wildlife Refuges without specific authorization from Congress. Passed by the House Resources Committee. Opposed by the President.

H.R.1420, the National Wildlife Refuge System Improvement Act of 1997 reforming the management of the National Wildlife Refuge System. Passed by both houses and signed into law by the President on October 9.

Takings

S. 709 (Hager, R/NE) to protect private

property rights guaranteed by the fifth amendment to the Constitution by requiring federal agencies to prepare private property taking impact analyses and by allowing expanded access to federal courts.

S. 781 (Hatch, R/UT) to establish a uniform and efficient federal process for protecting property owners' rights under the fifth amendment.

Water and Wetlands

H.R.128 (Crapo, R/ID) to preserve the authority of the states over waters within their boundaries, and to delegate the authority of the Congress to the states to regulate water.

H.R. 227 (McCollum, R/FL) directs

the Secretary of the Army to conduct a study of mitigation banks.

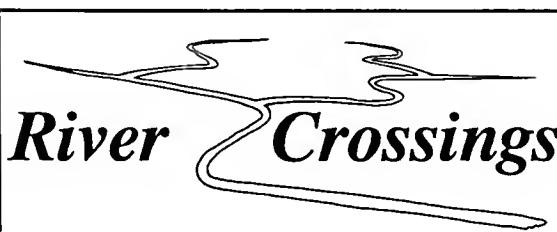
H.R. 238 (Robert Menendez D/NJ) to amend the Oil Pollution Act of 1990 to make the act more effective in preventing oil pollution in the nation's waters through enhanced prevention of, and improved response to oil spills, and to ensure that citizens and communities injured by oil spills are promptly and fully compensated, and for other purposes.

H.R. 550 (Oberstar, D/MN), NonPoint Source Water Pollution Prevention Act of 1997 amends the Clean Water Act to establish requirements and provide assistance to prevent nonpoint sources of water pollution, and for other purposes.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the Food Security Act of 1985 and the Clean Water Act to permit the unimpeded use of privately owned crop range and pasture land that have been used for the planting of crops or the grazing of corn in at least 5 of the preceding 10 years.

H.R. 2556, Jim Saxton (R/NJ) to reauthorize the North American Wetlands Conservation Act and the Partnerships for Wildlife Act.

Sources: Land Letter, STATUS REPORT, Vol.16, No. 2,5,8,11,13 17, 20, 25, and 26; and NOAA Legislative Informer, 3/97, Issue



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